UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-Q

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT of 1934**

For the quarterly period ended September 30, 2022

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT of 1934**

For the transition period from to

Commission File Number 000-30833

BRUKER CORPORATION
(Exact name of registrant as specified in its charter)

Delaware	**04-3110160**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

40 Manning Road, Billerica, MA 01821
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (978) 663-3660

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbols(s)	Name of each exchange on which registered
Common Stock	**BRKR**	**Nasdaq Global Select Market**

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

Class	Outstanding at November 1, 2022
Common Stock, $0.01 par value per share	**147,082,724 shares**

BRUKER CORPORATION
Quarterly Report on Form 10-Q
For the Quarter Ended September 30, 2022

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PART I FINANCIAL INFORMATION

ITEM 1. UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

BRUKER CORPORATION
UNAUDITED CONDENSED CONSOLIDATED BALANCE SHEETS
(in millions, except share and per share data)

	September 30, 2022	December 31, 2021
ASSETS		
Current assets:		
Cash and cash equivalents	$ 626.2	$ 1,068.2
Short-term investments	—	100.0
Accounts receivable, net	421.3	416.9
Inventories	749.5	710.1
Assets held for sale	—	4.4
Other current assets	239.6	172.2
Total current assets	2,036.6	2,471.8
Property, plant and equipment, net	421.5	406.1
Goodwill	381.5	339.5
Intangible assets, net	214.0	211.8
Other long-term assets	283.3	220.8
Total assets	$ 3,336.9	$ 3,650.0
LIABILITIES, REDEEMABLE NONCONTROLLING INTERESTS AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Current portion of long-term debt	$ 17.0	$ 112.4
Accounts payable	157.7	147.4
Customer advances	175.5	197.5
Other current liabilities	514.4	481.2
Total current liabilities	864.6	938.5
Long-term debt	1,136.8	1,221.8
Other long-term liabilities	381.8	404.9
Commitments and contingencies (Note 14)		
Redeemable noncontrolling interests	5.7	0.2
Shareholders' equity:		
Preferred stock, $0.01 par value 5,000,000 shares authorized, none issued or outstanding	—	—
Common stock, $0.01 par value 260,000,000 shares authorized, 175,297,676 and 174,905,035 shares issued and 147,366,634 and 150,753,687 shares outstanding at September 30, 2022 and December 31, 2021, respectively	1.7	1.7
Treasury stock, at cost, 27,931,042 and 24,151,348 shares at September 30, 2022 and December 31, 2021, respectively	(1,058.6)	(820.3)
Accumulated other comprehensive loss, net of tax	(92.1)	(8.2)
Other shareholders' equity	2,086.0	1,897.3
Total shareholders' equity attributable to Bruker Corporation	937.0	1,070.5
Noncontrolling interests in consolidated subsidiaries	11.0	14.1
Total shareholders' equity	948.0	1,084.6
Total liabilities, redeemable noncontrolling interests and shareholders' equity	$ 3,336.9	$ 3,650.0

The accompanying notes are an integral part of these financial statements

BRUKER CORPORATION
UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF INCOME AND COMPREHENSIVE INCOME
(in millions, except per share data)

	Three Months Ended September 30, 2022	Three Months Ended September 30, 2021	Nine Months Ended September 30, 2022	Nine Months Ended September 30, 2021
Product revenue	$ 536.6	$ 508.3	$ 1,512.8	$ 1,441.2
Service revenue	100.9	99.0	305.0	287.8
Other revenue	1.4	1.6	4.5	5.4
Total revenue	638.9	608.9	1,822.3	1,734.4
Cost of product revenue	240.5	243.5	699.6	700.4
Cost of service revenue	63.1	56.5	182.8	165.3
Cost of other revenue	—	0.2	0.1	0.7
Total cost of revenue	303.6	300.2	882.5	866.4
Gross profit	335.3	308.7	939.8	868.0
Operating expenses:				
Selling, general and administrative	144.8	141.3	442.7	407.9
Research and development	56.2	52.1	172.4	162.7
Other charges, net	3.0	2.1	23.0	9.5
Total operating expenses	204.0	195.5	638.1	580.1
Operating income	131.3	113.2	301.7	287.9
Interest and other income (expense), net	(2.0)	(4.4)	(8.8)	(13.8)
Income before income taxes, equity in income of unconsolidated investee, net of tax, and noncontrolling interests in consolidated subsidiaries	129.3	108.8	292.9	274.1
Income tax provision	41.2	20.7	93.0	69.5
Equity in income of unconsolidated investee, net of tax	0.3	—	0.3	—
Consolidated net income	88.4	88.1	200.2	204.6
Net income attributable to noncontrolling interests in consolidated subsidiaries	0.3	1.0	1.0	3.2
Net income attributable to Bruker Corporation	$ 88.1	$ 87.1	$ 199.2	$ 201.4
Net income per common share attributable to Bruker Corporation shareholders:				
Basic	$ 0.60	$ 0.58	$ 1.34	$ 1.33
Diluted	$ 0.59	$ 0.57	$ 1.33	$ 1.32
Weighted average common shares outstanding:				
Basic	147.8	151.4	149.1	151.5
Diluted	148.6	152.8	149.9	153.0
Comprehensive income	$ 44.6	$ 73.1	$ 113.7	$ 188.1
Less: Comprehensive (loss) income attributable to noncontrolling interests	(0.3)	0.7	(0.5)	0.9
Less: Comprehensive loss attributable to redeemable noncontrolling interests	(0.6)	—	(1.3)	—
Comprehensive income attributable to Bruker Corporation	$ 45.5	$ 72.4	$ 115.5	$ 187.2

The accompanying notes are an integral part of these financial statements

BRUKER CORPORATION
UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF REDEEMABLE NONCONTROLLING INTERESTS AND SHAREHOLDERS' EQUITY
(in millions, except share data)

	Redeemable Noncontrolling Interests	Common Shares	Common Stock Amount	Treasury Shares	Treasury Stock Amount	Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Total Shareholders' Equity Attributable to Bruker Corporation	Noncontrolling Interests in Consolidated Subsidiaries	Total Shareholders' Equity
Balance at December 31, 2021	$ 0.2	150,753,687	$ 1.7	24,151,348	$ (820.3)	$ 237.8	$ 1,659.5	$ (8.2)	$ 1,070.5	$ 14.1	$ 1,084.6
Stock options exercised	—	118,630	—	—	—	3.1	—	—	3.1	—	3.1
Restricted stock units vested	—	22,440	—	—	—	—	—	—	—	—	—
Stock-based compensation	—	—	—	—	—	3.8	—	—	3.8	—	3.8
Shares repurchased	—	(1,603,055)	—	1,603,055	(105.6)	—	—	—	(105.6)	—	(105.6)
Cash dividends paid to common shareholders ($0.05 per share)	—	—	—	—	—	—	(7.5)	—	(7.5)	—	(7.5)
Consolidated net income	—	—	—	—	—	—	61.6	—	61.6	0.5	62.1
PreOmics Acquisition - other shareholders	6.8	—	—	—	—	—	—	—	—	—	—
Other comprehensive loss	(0.2)	—	—	—	—	—	—	(8.9)	(8.9)	(0.3)	(9.2)
Balance at March 31, 2022	$ 6.8	149,291,702	$ 1.7	25,754,403	$ (925.9)	$ 244.7	$ 1,713.6	$ (17.1)	$ 1,017.0	$ 14.3	$ 1,031.3
Stock options exercised	—	14,110	—	—	—	0.2	—	—	0.2	—	0.2
Restricted stock units vested	—	1,811	—	—	—	—	—	—	—	—	—
Stock-based compensation	—	—	—	—	—	3.8	—	—	3.8	—	3.8
Shares repurchased	—	(983,741)	—	983,741	(60.3)	—	—	—	(60.3)	—	(60.3)
Cash dividends paid to common shareholders ($0.05 per share)	—	—	—	—	—	—	(7.5)	—	(7.5)	—	(7.5)
Consolidated net income	(0.2)	—	—	—	—	—	49.5	—	49.5	0.4	49.9
Other comprehensive loss	(0.3)	—	—	—	—	—	—	(32.2)	(32.2)	(0.8)	(33.0)
Balance at June 30, 2022	$ 6.3	148,323,882	$ 1.7	26,738,144	$ (986.2)	$ 248.7	$ 1,755.6	$ (49.3)	$ 970.5	$ 13.9	$ 984.4
Stock options exercised	—	30,699	—	—	—	0.6		—	0.6	—	0.6
Restricted stock units vested	—	204,951	—	—	—	(3.1)	—	—	(3.1)	—	(3.1)
Stock-based compensation	—	—	—	—	—	3.9	—	—	3.9	—	3.9
Shares repurchased	—	(1,192,898)	—	1,192,898	(72.4)	—	—	—	(72.4)	—	(72.4)
Cash dividends paid to common shareholders ($0.05 per share)	—	—	—	—	—	—	(7.4)	—	(7.4)	—	(7.4)
Consolidated net income	(0.2)	—	—	—	—	—	88.1	—	88.1	0.5	88.6
Acquisition of minority interest	—	—	—	—	—	—	(0.4)	(0.2)	(0.6)	(2.6)	(3.2)
Other comprehensive loss	(0.4)	—	—	—	—	—	—	(42.6)	(42.6)	(0.8)	(43.4)
Balance at September 30, 2022	$ 5.7	147,366,634	$ 1.7	27,931,042	$ (1,058.6)	$ 250.1	$ 1,835.9	$ (92.1)	$ 937.0	$ 11.0	$ 948.0

The accompanying notes are an integral part of these financial statements

BRUKER CORPORATION
UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF REDEEMABLE NONCONTROLLING INTERESTS AND SHAREHOLDERS' EQUITY
(in millions, except share data)

	Redeemable Noncontrolling Interests	Common Shares	Common Stock Amount	Treasury Shares	Treasury Stock Amount	Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total Shareholders' Equity Attributable to Bruker Corporation	Noncontrolling Interests in Consolidated Subsidiaries	Total Shareholders' Equity
Balance at December 31, 2020	$ —	151,987,081	$ 1.7	22,058,529	$ (667.0)	$ 216.3	$ 1,406.5	$ 3.7	$ 961.2	$ 13.1	$ 974.3
Stock options exercised	—	65,312	—	—	—	1.2	—	—	1.2	—	1.2
Restricted stock units vested	—	21,821	—	—	—	(0.1)	—	—	(0.1)	—	(0.1)
Stock-based compensation	—	—	—	—	—	3.4	—	—	3.4	—	3.4
Shares repurchased	—	(530,729)	—	530,729	(32.8)	—	—	—	(32.8)	—	(32.8)
Cash dividends paid to common shareholders ($0.04 per share)	—	—	—	—	—	—	(6.1)	—	(6.1)	—	(6.1)
Consolidated net income	—	—	—	—	—	—	56.7	—	56.7	1.1	57.8
Other comprehensive loss	—	—	—	—	—	—	—	(15.8)	(15.8)	(0.2)	(16.0)
Balance at March 31, 2021	$ —	151,543,485	$ 1.7	22,589,258	$ (699.8)	$ 220.8	$ 1,457.1	$ (12.1)	$ 967.7	$ 14.0	$ 981.7
Stock options exercised	—	64,783	—	—	—	1.0	—	—	1.0	—	1.0
Restricted stock units vested	—	1,780	—	—	—	—	—	—	—	—	—
Stock-based compensation	—	—	—	—	—	3.6	—	—	3.6	—	3.6
Shares repurchased	—	(555,576)	—	555,576	(38.3)	—	—	—	(38.3)	—	(38.3)
Cash dividends paid to common shareholders ($0.04 per share)	—	—	—	—	—	—	(6.0)	—	(6.0)	—	(6.0)
Formation of Acuity Spatial Genomics Inc.	0.3	—	—	—	—	—	—	—	—	—	—
Consolidated net income	—	—	—	—	—	—	57.6	—	57.6	1.1	58.7
Other comprehensive income (loss)	—	—	—	—	—	—	—	16.4	16.4	(1.7)	14.7
Balance at June 30, 2021	$ 0.3	151,054,472	$ 1.7	23,144,834	$ (738.1)	$ 225.4	$ 1,508.7	$ 4.3	$ 1,002.0	$ 13.4	$ 1,015.4
Stock options exercised	—	385,597	—	—	—	8.3	—	—	8.3	—	8.3
Restricted stock units vested	—	250,595	—	—	—	(4.5)	—	—	(4.5)	—	(4.5)
Stock-based compensation	—	—	—	—	—	3.8	—	—	3.8	—	3.8
Cash dividends paid to common shareholders ($0.04 per share)	—	—	—	—	—	—	(6.1)	—	(6.1)	—	(6.1)
Consolidated net income	—	—	—	—	—	—	87.1	—	87.1	1.0	88.1
Other comprehensive loss	—	—	—	—	—	—	—	(15.0)	(15.0)	(0.4)	(15.4)
Balance at September 30, 2021	$ 0.3	151,690,664	$ 1.7	23,144,834	$ (738.1)	$ 233.0	$ 1,589.7	$ (10.7)	$ 1,075.6	$ 14.0	$ 1,089.6

The accompanying notes are an integral part of these financial statements

BRUKER CORPORATION
UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(in millions)

	Nine Months Ended September 30,	
	2022	2021
Cash flows from operating activities:		
Consolidated net income	$ 200.2	$ 204.6
Adjustments to reconcile consolidated net income to cash flows from operating activities:		
Depreciation and amortization	64.3	66.1
Stock-based compensation expense	23.0	11.9
Deferred income taxes	(25.7)	(6.5)
Other non-cash expenses, net	11.8	24.8
Changes in operating assets and liabilities, net of acquisitions and divestitures:		
Accounts receivable	(39.7)	(47.7)
Inventories	(139.1)	(81.3)
Accounts payable and accrued expenses	0.3	45.9
Income taxes payable, net	10.6	(33.4)
Deferred revenue	14.0	19.4
Customer advances	(3.5)	(9.5)
Other changes in operating assets and liabilities, net	(13.3)	(50.5)
Net cash provided by operating activities	102.9	143.8
Cash flows from investing activities:		
Purchases of short-term investments	—	(48.0)
Maturity of short-term investments	100.0	0.7
Cash paid for strategic investments	(40.8)	(0.5)
Cash paid for acquisitions, net of cash acquired	(85.5)	(45.0)
Purchases of property, plant and equipment	(94.6)	(63.6)
Proceeds from sales of property, plant and equipment	13.8	4.0
Net proceeds from cross-currency swap agreements	4.8	8.6
Net cash used in investing activities	(102.3)	(143.8)
Cash flows from financing activities:		
Repayment of other debt, net	(1.2)	(1.8)
Repayment of 2012 Note Purchase Agreement	(105.0)	—
Repayment of 2019 Note Purchase Agreement	(2.3)	—
Proceeds from issuance of common stock, net	0.8	5.9
Payment of contingent consideration	(1.7)	(0.4)
Payment of dividends to common shareholders	(22.4)	(18.2)
Repurchase of common stock	(236.8)	(71.1)
Purchase of minority interest	(10.6)	—
Net cash used in financing activities	(379.2)	(85.6)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(63.8)	(23.4)
Net change in cash, cash equivalents and restricted cash	(442.4)	(109.0)
Cash, cash equivalents and restricted cash at beginning of period	1,071.7	685.5
Cash, cash equivalents and restricted cash at end of period	$ 629.3	$ 576.5
Supplemental disclosure of cash flow information:		
Restricted cash period beginning balance	$ 3.5	$ 3.7
Restricted cash period ending balance	$ 3.1	$ 3.5

The accompanying notes are an integral part of these financial statements

1. Description of Business

Bruker Corporation, together with its consolidated subsidiaries (Bruker or the Company), develops, manufactures and distributes high-performance scientific instruments and analytical and diagnostic solutions that enable its customers to explore life and materials at microscopic, molecular and cellular levels. Many of the Company's products are used to detect, measure and visualize structural characteristics of chemical, biological and industrial material samples. The Company's products address the rapidly evolving needs of a diverse array of customers in life science research, pharmaceuticals, biotechnology, applied markets, cell biology, clinical research, microbiology, in vitro diagnostics, nanotechnology and materials science research.

The Company has four operating segments, *Bruker BioSpin Group, Bruker CALID Group, Bruker Scientific Instruments (BSI) Nano Segment* and *Bruker Energy & Supercon Technologies (BEST)*. The Company has three reportable segments, *BSI Life Science, BSI Nano,* and *BEST*.

For financial reporting purposes, the Bruker BioSpin Group and Bruker CALID Group operating segments are aggregated into the reportable BSI Life Science segment because each has similar economic characteristics, production processes, service offerings, types and classes of customers, methods of distribution and regulatory environments.

Bruker BioSpin — The Bruker BioSpin Group designs, manufactures and distributes enabling life science tools based on magnetic resonance technology. Bruker BioSpin Group's revenues are generated by academic and government research customers, pharmaceutical and biotechnology companies and nonprofit laboratories, as well as chemical, food and beverage, clinical and other industrial companies.

Bruker CALID (Chemicals, Applied Markets, Life Science, In Vitro Diagnostics, Detection) — The Bruker CALID Group designs, manufactures and distributes life science mass spectrometry and ion mobility spectrometry solutions, analytical and process analysis instruments and solutions based on infrared and Raman molecular spectroscopy technologies and radiological/nuclear detectors for Chemical, Biological, Radiological, Nuclear and Explosive (CBRNE) detection. Customers of the Bruker CALID Group include academic institutions and medical schools; pharmaceutical, biotechnology and diagnostics companies; contract research organizations; nonprofit and for-profit forensics laboratories; agriculture, food and beverage safety laboratories; environmental and clinical microbiology laboratories; and hospitals and government departments and agencies.

The BSI Nano segment designs, manufactures and distributes advanced X-ray instruments; atomic force microscopy instrumentation; advanced fluorescence optical microscopy instruments; analytical tools for electron microscopes and X-ray metrology; defect-detection equipment for semiconductor process control; handheld, portable and mobile X-ray fluorescence spectrometry instruments; spark optical emission spectroscopy systems; chip cytometry products and services for targeted spatial proteomics, multi-omic services; and products and services for spatial genomics research. Customers of the BSI Nano segment include academic institutions, governmental customers, nanotechnology companies, semiconductor companies, raw material manufacturers, industrial companies, biotechnology and pharmaceutical companies and other businesses involved in materials research and life science research analysis.

The BEST reportable segment develops and manufactures superconducting and non-superconducting materials and devices for use in renewable energy, energy infrastructure, healthcare and "big science" research. The segment focuses on metallic low temperature superconductors for use in magnetic resonance imaging, nuclear magnetic resonance, fusion energy research and other applications.

The unaudited condensed consolidated financial statements represent the consolidated accounts of the Company. All intercompany accounts and transactions have been eliminated in consolidation. The unaudited condensed consolidated financial statements as of September 30, 2022 and December 31, 2021, and for the three and nine months ended September 30, 2022 and 2021, have been prepared in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP) for interim financial information and pursuant to the rules and regulations of the Securities and Exchange Commission (SEC). Accordingly, the financial information presented herein does not include all of the information and footnotes required by U.S. GAAP for complete financial statements. In the opinion of management, all adjustments, consisting only of normal recurring adjustments, considered necessary for a fair statement have been included. The results for interim periods are not necessarily indicative of the results expected for any other interim period or the full year.

At September 30, 2022, the Company's significant accounting policies, which are detailed in the Company's Annual Report on Form 10-K for the year ended December 31, 2021, have not changed.

Risks and Uncertainties

The Company is subject to risks common to its industry including, but not limited to, global economic conditions, (including increasing inflation), rapid technological change, government and academic funding levels, the impact of the COVID-19 coronavirus, geopolitical uncertainties, changes in commodity prices, spending patterns of its customers, protection of its intellectual property, availability of key raw materials and components and other supply chain challenges, compliance with existing and future regulation by government agencies and fluctuations in foreign currency exchange rates and interest rates.

The impact of the COVID-19 worldwide pandemic has been and will likely continue to be extensive in certain geographies and aspects of society. The pandemic has resulted in and will likely continue to result in significant disruptions to the global economy, global supply chains, as well as businesses and capital markets around the world.

Impacts to the Company's business since the beginning of the pandemic have included temporary closures of many of the Company's government and university customers and suppliers, disruptions or restrictions on employees' and customers' ability to travel, and delays in product installations or shipments to and from affected countries. In an effort to halt the outbreak of COVID-19, a number of countries, including the United States, implemented and some continue to implement, significant restrictions on travel, shelter in place or stay at home orders, and business closures. While many of these restrictions have loosened in certain jurisdictions, including the United States and Europe, some markets have returned and others may return to restrictions in the face of increases in new COVID-19 cases, particularly if additional or more contagious variants or subvariants of the virus emerge or spread. Many of the Company's employees in jurisdictions in which it has significant operations continue to work remotely. In addition, certain Asia Pacific geographies where the Company operates are continuing to experience significant COVID-19 disruptions, including extensive and sustained lockdowns. Much of the commercial activity in sales and marketing, and customer demonstrations and applications training, is still either being conducted remotely or postponed. Even where customers have re-opened their sites, some still operate at productivity levels that are below pre-pandemic levels in an effort to accommodate safety protocols and as a result of pandemic-related supply chain disruptions. Any resurgence of the virus or the emergence or spread of new variants or subvariants of the virus, particularly any variants or subvariants which are more easily transmitted or which are resistant to existing vaccines, may require the Company or its customers to close or partially close operations once again. These travel restrictions, business closures and operating reductions at Bruker, customers, distributors, and/or suppliers have in the past adversely impacted and may continue to adversely impact the Company's operations worldwide, including the ability to manufacture, sell or distribute products, as well as cause temporary closures of foreign distributors, or the facilities of suppliers or customers. Global supply chains, including for semiconductor chips, components and raw materials such as copper, have been disrupted, causing shortages, which has impacted the Company's ability to manufacture or supply its products. The Company could also experience increased compensation expenses associated with employee recruiting and employee retention to the extent that employment opportunities continue to multiply post-pandemic, causing the search for and retention of talent to become more competitive. This disruption of the Company's employees, distributors, suppliers and customers has impacted and is continuing to impact the Company's global sales and operating results.

Further, while the Company is not currently subject to any vaccine mandate, any requirement to mandate COVID-19 vaccination of its workforce or require the Company's unvaccinated employees to be tested weekly could result in employee attrition and difficulty securing future labor needs and may have an adverse effect on future operations. The Company's policy continues to encourage its employees to be fully vaccinated against COVID-19.

The Company is continuing to monitor and assess the effects of the COVID-19 pandemic on commercial operations in 2022. However, the Company cannot at this time accurately predict what effects these conditions will ultimately have on future operations due to uncertainties relating to the duration of the outbreak, including the impact of any resurgence of the virus or the continued emergence or spread of certain variants or subvariants, the effectiveness and availability of vaccines (including to protect against any new variants or subvariants), the willingness of individuals to receive vaccines and boosters, and the length or severity of travel restrictions, business closures and other safety and precautionary measures imposed by the governments of impacted countries. The pandemic has also adversely affected the economies and financial markets of many countries, which has affected and likely will continue to affect demand for the Company's products and its operating results.

The Company may experience supply chain interruptions as a result of the COVID-19 pandemic, general global economic conditions, including inflation and the threat of a potential recession, a tighter labor market and other factors including natural events and disasters. Various factors, including increased demand for certain components and production delays, are contributing to shortages of certain components used in the Company's products and increased difficulties in the Company’s ability to obtain a consistent supply of materials at stable pricing levels. Supply shortages and longer lead times for components used in the Company’s products, including limited source components, has resulted and may continue to result in additional costs and inefficiencies in manufacturing. A shortage of key components has caused and may continue to cause disruptions to the Company’s production activities, which has had and may continue to have an adverse effect on the Company's financial condition or results of operations. These factors have impacted and may continue to impact the timing of the Company's revenue, and have also resulted, and may result in a delay of revenue, and an increase in manufacturing costs, all of which have adversely impacted and may continue to adversely impact the Company’s operating results.

Additionally, geopolitical tensions, such as Russia's incursion into and ongoing war in Ukraine, ongoing conflicts between the United States and China, tariff and trade policy changes, economic sanctions, and increasing potential of conflict involving countries in Asia that are critical to the Company's supply chain operations, such as Taiwan and China, have resulted in increasing global instability and create uncertainty for global commerce. In addition to experiencing adverse economic impacts resulting from economic sanctions on Russia, as well as the prospect of a reduction in natural gas exports from Russia and resulting market disruptions, such as higher prices for and reduced availability of key metals used in our products, the Company has ceased its Russian operations. Sustained or worsening global economic conditions and increasing inflation and geopolitical tensions have increased the Company's cost of doing business, impacted the Company's supply chain operations, caused certain of the Company's customers to reduce or delay spending and further intensified pricing pressures. Combined with increased inflation, potential energy shortages in Europe where we have significant operations and overall higher energy and transportation costs, these factors have affected and may continue to affect the Company's financial condition and result of operations.

The preparation of the unaudited condensed consolidated financial statements requires the Company to make estimates, judgments and assumptions that may affect the reported amounts of assets, liabilities, equity, revenues and expenses and related disclosure of contingent assets and liabilities. On an ongoing basis the Company evaluates estimates, judgments and methodologies. Changes in estimates are recorded in the period in which they become known. The Company bases its estimates on historical experience and on various other assumptions that it believes are reasonable, the results of which form the basis for making judgments about the carrying values of assets, liabilities and equity and the amount of revenues and expenses. The full extent to which the COVID-19 pandemic, global supply chain interruptions, higher energy costs and shortages, the global economy, including inflation and the threat of recession, and geopolitical instability will directly or indirectly impact future business, results of operations and financial condition, including sales, expenses, reserves and allowances, manufacturing, research and development costs and employee cost related amounts, will depend on future developments that are highly uncertain, including as a result of new developments concerning the COVID-19 pandemic, global supply chain and various global conflicts. The Company has made estimates of the impact of COVID-19 within the financial statements and there may be changes to those estimates in future periods. Actual results may differ from management’s estimates if these results differ from historical experience.

2. Recent Accounting Pronouncements

In March 2020, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2020-04, *Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting* (“ASU 2020-04”), which provides temporary optional guidance to ease the potential burden in accounting for reference rate reform. The guidance provides optional expedients and exceptions for applying generally accepted accounting principles to transactions affected by reference rate reform if certain criteria are met. These transactions include: contract modifications, hedging relationships, and sale or transfer of debt securities classified as held-to-maturity. In January 2021, the FASB issued ASU 2021-01, Reference Rate Reform (Topic 848): Scope, to clarify that certain optional expedients and exceptions under the reference rate reform guidance for contract modifications and hedge accounting apply to derivatives that are affected by the discounting transition. Specifically, certain provisions in the reference rate reform guidance, if elected by an entity, apply to derivative instruments that use an interest rate for margining, discounting, or contract price alignment that is modified as a result of reference rate reform. This temporary guidance is effective for all entities as of March 12, 2020 through December 31, 2022. The Company elected to apply this guidance for all contract modifications or eligible hedging relationships during that time period subject to certain criteria. The adoption of this standard has not and is not expected to have a material impact on the Company's consolidated financial statements.

3. Revenue

The following tables presents the Company's revenues by Group and End Customer Geography (in millions):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Revenue by Group:				
Bruker BioSpin	$ 175.7	$ 186.5	$ 493.3	$ 494.4
Bruker CALID	207.5	194.2	601.0	579.9
Bruker Nano	199.1	174.9	559.8	504.6
BEST	59.3	57.0	178.2	166.0
Eliminations	(2.7)	(3.7)	(10.0)	(10.5)
Total revenue	$ 638.9	$ 608.9	$ 1,822.3	$ 1,734.4

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Revenue by End Customer Geography:				
United States	$ 191.8	$ 163.2	$ 518.3	$ 442.0
Germany	51.9	55.5	177.7	186.4
Rest of Europe	151.7	155.4	425.4	459.9
China	111.6	105.4	291.0	252.6
Rest of Asia Pacific	85.1	86.2	271.1	273.2
Other	46.8	43.2	138.8	120.3
Total revenue	$ 638.9	$ 608.9	$ 1,822.3	$ 1,734.4

Revenue for the Company recognized at a point in time versus over time is as follows (in millions):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Revenue recognized at a point in time	$ 557.0	$ 530.8	$ 1,580.2	$ 1,503.0
Revenue recognized over time	81.9	78.1	242.1	231.4
Total revenue	$ 638.9	$ 608.9	$ 1,822.3	$ 1,734.4

Remaining Performance Obligations

Remaining performance obligations represent the aggregate transaction price allocated to a promise to transfer a good or service that is fully or partially unsatisfied at the end of the period. As of September 30, 2022, remaining performance obligations were approximately $2,013.3 million. The Company expects to recognize revenue on approximately 78% of the remaining performance obligations over the next twelve months and the remaining performance obligations primarily within one to three years.

Contract Balances

The timing of revenue recognition, billings and cash collections results in billed accounts receivable, note receivables and unbilled receivables (contract assets) and deferred revenue, customer deposits and billings in excess of revenue recognized (contract liabilities) on the Company's unaudited condensed consolidated balance sheets.

Contract assets—Most of the Company's long-term contracts are billed as work progresses in accordance with the contract terms and conditions, either at periodic intervals or upon achievement of certain milestones. Billing often occurs subsequent to revenue recognition, resulting in contract assets. Contract assets are generally classified as other current assets in the unaudited condensed consolidated balance sheets. The balance of contract assets as of September 30, 2022 and December 31, 2021 was $60.1 million and $46.1 million, respectively.

Contract liabilities—The Company often receives cash payments from customers in advance of the Company's performance, resulting in contract liabilities. These contract liabilities are classified as either current or long-term in the unaudited condensed consolidated balance sheets based on the timing of when revenue recognition is expected. As of September 30, 2022 and December 31, 2021, the contract liabilities were $408.4 million and $430.8 million, respectively. The decrease in the contract liability balance during the nine months ended September 30, 2022 is primarily the result of satisfying performance obligations and foreign currency translation which were offset in part by new cash payments received. Approximately $261.4 million of the contract liability balance on December 31, 2021 was recognized as revenue during the nine months ended September 30, 2022.

4. Acquisitions

The Company has not presented pro forma financial information reflecting all acquisitions because the impact, individually and collectively, on revenues and net income is not material. The Company does not expect the amounts allocated to goodwill that are attributable to expected synergies to be deductible for tax purposes.

2022

PreOmics GmbH

On January 18, 2022, the Company acquired a 74.15% interest in PreOmics GmbH, ("PreOmics"), a privately held company, for a purchase price of EUR 46.1 million (approximately $52.1 million). PreOmics is a leading provider of sample preparation and automation solutions for proteomic analysis by mass spectrometry systems. PreOmics is located in Munich, Germany and was integrated into Bruker CALID Group within the BSI Life Science Segment.

Concurrent with the acquisition, the Company entered into an agreement with the noncontrolling interest holders that provides the Company with the right to purchase, and the noncontrolling interest holders with the right to sell, the remaining 25.85% of PreOmics for cash at a contractually defined redemption value for both the original founders and other shareholders of PreOmics, exercisable beginning in 2026. The fair value of these rights has been bifurcated into two financial instruments to separately account for the amounts attributable to the founders and the amount attributable to other shareholders.

The rights (embedded derivative) associated with the founders can be accelerated, at a discounted redemption value, upon certain events related to post combination employment services. As the options are tied to continued employment, the Company classified the hybrid instrument (noncontrolling interest with an embedded derivative) as a long-term liability on the condensed consolidated balance sheet. The hybrid instrument associated with the founders was initially measured at fair value on the acquisition date. Subsequent to the acquisition, the carrying value of the hybrid instrument is remeasured to fair value with changes recorded to stock-based compensation expense in proportion to the requisite service period vested.

The rights associated with the other noncontrolling interest shareholders are contingently redeemable at their option. As redemption of the rights is contingently redeemable at the option of the noncontrolling interest shareholders, the Company classifies the carrying amount of the redeemable noncontrolling interest in the mezzanine section on the consolidated balance sheet, which is presented above the equity section and below liabilities. The redeemable noncontrolling interest is initially measured at fair value and subsequently at the greater of the amount that would be paid if settlement occurred as of the balance sheet date based on the contractually defined redemption value and its carrying amount adjusted for net income (loss) attributable to the noncontrolling interest. Adjustments to the carrying value of the redeemable noncontrolling interest are recorded through retained earnings.

The Company expects to complete the fair value allocation during the measurement period. The amortization period for the intangible assets acquired is nine years for technology, and twelve years for the trade name and customer relationships.

The components and fair value allocation of the consideration transferred in connection with the acquisition are as follows (in millions):

Consideration Transferred:		
Cash paid	$	52.1
Cash acquired		(16.0)
Fair value of hybrid financial instrument - founders		20.9
Fair value of redeemable noncontrolling interest - other shareholders		6.8
Total consideration transferred	$	63.8
Allocation of Consideration Transferred:		
Accounts receivable	$	0.4
Inventories		0.6
Other current assets		0.7
Property, plant and equipment		1.3
Other assets		0.4
Intangible assets:		
Technology		12.5
Customer relationships		6.9
Trade name		1.9
Goodwill		47.0
Liabilities assumed		(7.9)
Total consideration allocated	$	63.8

Optimal Industrial Automation and Technologies

On April 1, 2022, the Company completed a share purchase agreement to acquire 100% of the outstanding stock of Optimal Industrial Technologies Limited ("OIT") and Optimal Industrial Automation Limited ("OIA"), collectively, "Optimal". The purchase price for the outstanding shares of Optimal was approximately GBP 30.7 million (approximately $40.3 million) with the potential for additional contingent consideration of up to GBP 3.4 million (approximately $4.5 million). Optimal is located in Bristol, England, and will be integrated into the Bruker BioSpin Group within the BSI Life Science Segment. The Company accounted for the purchase of Optimal under the acquisition method.

The preliminary fair value allocation for Optimal included contingent consideration in the amount of GBP 0.3 million (approximately $0.4 million), which represented the estimated fair value of future payments to the former shareholders of Optimal based on achieving revenue targets in 2022. The Company expects to complete the fair value allocation during the measurement period. The amortization period for the intangible assets acquired is ten years for the technology, between twelve years and fourteen years for the customer relationships, and thirteen years for the trade names. The Company expects to amortize backlog through the second quarter of 2023.

The components and fair value allocation of the consideration transferred in connection with the acquisition are as follows (in millions):

Consideration Transferred:		
Cash paid	$	40.3
Cash acquired		(6.2)
Fair value of contingent consideration		0.4
Total consideration transferred	$	34.5
Allocation of Consideration Transferred:		
Accounts receivable	$	1.9
Other current assets		0.8
Property, plant and equipment		0.1
Other assets		0.8
Intangible assets:		
Technology		5.9
Customer relationships		12.9
Backlog		1.1
Trade name		1.2
Goodwill		18.6
Liabilities assumed		(8.8)
Total consideration allocated	$	34.5

In the nine months ended September 30, 2022, the Company completed various other acquisitions accounted for under the acquisition method that complemented the Company’s existing product offerings. The following table reflects the consideration transferred and the respective reporting segment for the acquisitions (in millions):

Name of Acquisition	Date Acquired	Segment	Total Consideration	Cash Consideration
Prolab Instruments GmbH	January 17, 2022	BSI Life Science	$ 5.7	$ 5.5
PepSep Holding ApS	February 1, 2022	BSI Life Science	4.1	2.8
IonSense, Inc	April 5, 2022	BSI Life Science	9.5	8.1
			$ 19.3	$ 16.4

In the nine months ended September 30, 2022, the Company completed minority strategic investments that complemented the Company's existing product offerings. The following table reflects the consideration transferred and the respective reporting segment for the investments (in millions):

Name	Acquisition / Investment	Date Acquired	Segment	Total Consideration	Cash Consideration
PrognomiQ, Inc	Investment	February 16, 2022	BSI Life Science	$ 12.0	$ 12.0
Tofwerk, AG	Investment	April 28, 2022	BSI Life Science	18.6	18.6
Other Investments	Investment	Various	BSI Life Science	9.3	9.3
				$ 39.9	$ 39.9

Equity-method investments

The Company's investment in Tofwerk, AG is accounted for using the equity-method of accounting. The Company accounts for the investments under the equity method if the Company has the ability to exercise significant influence, but not control, over an investee. Investments in equity-method investees are included within "Other long-term assets" in the consolidated balance sheets. The Company's proportional share of the earnings or losses as reported by equity-method investees are classified as “Equity in income of unconsolidated investee, net of tax” in the consolidated statements of income and comprehensive income. The Company regularly evaluates these investments, which are not carried at fair value, for other-than-temporary impairment. The Company records investments, including incremental investments, of shares in equity-method investees at cost. In the event the Company no longer has the ability to exercise significant influence over an equity-method investee, the Company would discontinue accounting for the investment under the equity method.

5. Inventories

Inventories consisted of the following (in millions):

	September 30, 2022	December 31, 2021
Raw materials	$ 264.7	$ 218.7
Work-in-process	269.3	254.9
Finished goods	129.2	144.9
Demonstration units	86.3	91.6
Total Inventories	$ 749.5	$ 710.1

Finished goods include in-transit systems shipped to the Company's customers for which control has not passed to the customers. As of September 30, 2022, and December 31, 2021, the value of inventory-in-transit was $40.5 million and $49.5 million, respectively.

6. Goodwill and Intangible Assets

Goodwill

The following table sets forth the changes in the carrying amount of goodwill (in millions):

Balance at December 31, 2021	$ 339.5
Current period additions/adjustments	74.7
Foreign currency effect	(32.7)
Balance at September 30, 2022	$ 381.5

Intangible Assets

The following is a summary of intangible assets (in millions):

	September 30, 2022			December 31, 2021		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Existing technology and related patents	$ 315.3	$ (210.1)	$ 105.2	$ 310.4	$ (206.8)	$ 103.6
Customer relationships	162.4	(64.9)	97.5	156.1	(58.2)	97.9
Trade names	17.7	(6.7)	11.0	15.5	(5.8)	9.7
Other	0.9	(0.6)	0.3	1.8	(1.2)	0.6
Intangible assets	$ 496.3	$ (282.3)	$ 214.0	$ 483.8	$ (272.0)	$ 211.8

For the three months ended September 30, 2022 and 2021, the Company recorded amortization expense of $8.9 million and $9.3 million, respectively, related to intangible assets subject to amortization. For the nine months ended September 30, 2022 and 2021, the Company recorded amortization expense of $27.5 million and $27.3 million, respectively, related to intangible assets subject to amortization.

On a quarterly basis, the Company reviews its goodwill and intangible assets to determine if there have been any triggering events that could indicate an impairment. There were no events noted for the nine months ended September 30, 2022 or 2021.

7. Debt

The Company's debt obligations consist of the following (in millions):

	September 30, 2022	December 31, 2021
EUR notes (in U.S. dollars) under the 2021 Note Purchase Agreement	$ 146.8	$ 170.7
CHF notes (in U.S. dollars) under the 2021 Note Purchase Agreement	304.6	329.2
CHF notes (in U.S. dollars) under the 2019 Note Purchase Agreement	301.6	325.9
U.S. Dollar notes under the 2019 Term Loan Agreement	297.0	299.2
U.S. Dollar notes under the 2012 Note Purchase Agreement	100.0	205.0
Unamortized debt issuance costs	(1.7)	(2.0)
Other loans	1.9	1.9
Total notes and loans outstanding	1,150.2	1,329.9
Finance lease obligations	3.6	4.3
Total debt	1,153.8	1,334.2
Current portion of long-term debt	(17.0)	(112.4)
Total long-term debt, less current portion	$ 1,136.8	$ 1,221.8

The following is a summary of the maximum commitments and the net amounts available to the Company under the 2019 Revolving Credit Agreement and other lines of credit with various financial institutions located primarily in Germany and Switzerland that are unsecured and typically due upon demand with interest payable monthly, at September 30, 2022 (in millions):

	Weighted Average Interest Rate	Total Amount Committed by Lenders	Outstanding Borrowings	Outstanding Letters of Credit	Total Amount Available
2019 Credit Agreement	0.15%	$ 600.0	$ —	$ —	$ 600.0
Bank guarantees and working capital line	varies	101.3	—	101.3	—
Total revolving lines of credit		$ 701.3	$ —	$ 101.3	$ 600.0

As of September 30, 2022, the Company was in compliance with the financial covenants of all debt agreements.

As of September 30, 2022, the Company had several cross-currency and interest rate swap agreements with a notional value of $148.5 million of U.S. to Swiss Franc and a notional value of $248.5 million of U.S. to Euro to hedge the variability in the movement of foreign currency exchange rates on portions of our Euro and Swiss Franc denominated net asset investments. These agreements qualify for hedge accounting and accordingly the changes in fair value of the derivative are recorded in other comprehensive income and remain in accumulated comprehensive income (loss) attributable to Bruker Corporation in shareholders' equity until the sale or substantial liquidation of the foreign operation. The difference between the interest rate received and paid under the interest rate and cross-currency swap agreements is recorded in interest and other income (expense), net in the consolidated statements of income and comprehensive income. As a result of entering into these agreements, the Company lowered net interest expense by $2.5 million and $1.4 million during the three months ended September 30, 2022 and 2021, respectively, and by $5.2 million and $4.1 million during the nine months ended September 30, 2022 and 2021, respectively. The Company presents the cross-currency swap periodic settlements in investing activities and the interest rate swap periodic settlements in operating activities in the statement of cash flows.

On June 16, 2022, the Company entered into the First Amendment to the 2019 Credit Agreement to modify certain contract definitions within the agreement. Primarily, the current London Interbank Offered Rate ("LIBOR") rates were changed to new alternative base rates for the respective currencies. As part of the change any related items, such as fall back rates and day conventions were also changed. No other material terms were modified with this agreement. During 2022, the Company adopted the practical expedient for Reference Rate Reform related to its debt arrangements and as such, this amendment is treated as a continuation of the existing debt agreement and no gain or loss on the modification was recorded.

On September 30, 2022, the Company entered into the Second Amendment to the 2019 Term Loan Agreement and the Second Amendment to the 2019 Credit Agreement (collectively, the "Amendments"), to modify certain aspects of the 2019 Term Loan Agreement and 2019 Credit Agreement, respectively. The Amendments modify the reference rate thereunder from LIBOR to Secured Overnight Financing Rate ("SOFR"). There were no other changes to the 2019 Term Loan Agreement or 2019 Credit Agreement as a result of the Amendments. The Company did not record any gains or losses on the conversion of the reference rate for Borrowings under the Term Loan Agreement from LIBOR to SOFR.

8. Fair Value of Financial Instruments

The Company measures the following financial assets and liabilities at fair value on a recurring basis. The following tables set forth the Company's financial instruments measured at fair value on a recurring basis and present them within the fair value hierarchy using the lowest level of input that is significant to the fair value measurement (in millions):

September 30, 2022	Total	Quoted Prices in Active Markets Available (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Time deposits and money market funds	$ 204.1	$ 18.0	$ 186.1	$ —
Interest rate and cross-currency swap agreements	57.2	—	57.2	—
Forward currency contracts	0.1	—	0.1	—
Embedded derivatives in purchase and delivery contracts	0.3	—	0.3	—
Debt securities available for sale	1.2	—	—	1.2
Total assets recorded at fair value	$ 262.9	$ 18.0	$ 243.7	$ 1.2
Liabilities:				
Contingent consideration	$ 6.5	$ —	$ —	$ 6.5
Hybrid instruments liability	31.3	—	—	31.3
Liability awards	0.5	—	—	0.5
Interest rate and cross-currency swap agreements	5.8	—	5.8	—
Forward currency contracts	1.2	—	1.2	—
Fixed price commodity contracts	1.1	—	1.1	—
Long-term fixed interest rate debt	717.7	—	717.7	—
Total liabilities recorded at fair value	$ 764.1	$ —	$ 725.8	$ 38.3

December 31, 2021	Total	Quoted Prices in Active Markets Available (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Time deposits and money market funds	$ 367.7	$ —	$ 367.7	$ —
Short-term investments	100.0	—	100.0	—
Interest rate and cross-currency swap agreements	6.4	—	6.4	—
Forward currency contracts	0.7	—	0.7	—
Embedded derivatives in purchase and delivery contracts	0.2	—	0.2	—
Fixed price commodity contracts	0.4	—	0.4	—
Debt securities available for sale	1.2	—	—	1.2
Total assets recorded at fair value	$ 476.6	$ —	$ 475.4	$ 1.2
Liabilities:				
Contingent consideration	$ 6.6	$ —	$ —	$ 6.6
Hybrid instruments liability	15.6	—	—	15.6
Interest rate and cross-currency swap agreements	23.9	—	23.9	—
Forward currency contracts	0.3	—	0.3	—
Long-term fixed interest rate debt	1,043.3	—	1,043.3	—
Total liabilities recorded at fair value	$ 1,089.7	$ —	$ 1,067.5	$ 22.2

Derivative financial instruments are classified within level 2 because there is not an active market for each derivative contract. However, the inputs used to calculate the value of the instruments are obtained from active markets.

The Company measures certain assets and liabilities at fair value with changes in fair value recognized in earnings. Fair value treatment may be elected either upon initial recognition of an eligible asset or liability or, for an existing asset or liability, if an event triggers a new basis of accounting. The Company did not elect to remeasure any of its existing financial assets or liabilities and did not elect the fair value option for any financial assets or liabilities which originated during the nine months ended September 30, 2022 or 2021.

The fair value of the long-term fixed interest rate debt, classified as Level 2, was based on market and observable sources with similar maturity dates. The carrying value of the Company's variable rate debt approximates its fair value at September 30, 2022 and December 31, 2021.

On a quarterly basis, the Company reviews its short-term investments to determine if there have been any events that could indicate an impairment. There were none noted for the nine months ended September 30, 2022 or 2021.

Debt securities consist of investments in redeemable preferred stock. Debt securities are classified as either current or long-term investments based on their contractual maturities unless the Company intends to sell an investment within the next twelve months, in which case it is classified as current on the consolidated balance sheets. Debt securities are classified as available for sale and are carried at fair value.

Contingent consideration recorded within other current and other long-term liabilities represents the estimated fair value of future payments to the former shareholders as part of certain acquisitions. The contingent consideration is primarily based on the applicable acquired company achieving annual revenue and gross margin targets in certain years as specified in the relevant purchase and sale agreement. The Company initially values the contingent consideration on the acquisition date by using a Monte Carlo simulation or an income approach method. The Monte Carlo method models future revenue and costs of goods sold projections and discounts the average results to present value. The income approach method involves calculating the earnout payment based on the forecasted cash flows, adjusting the future earnout payment for the risk of reaching the projected financials, and then discounting the future payments to present value by the counterparty risk. The counterparty risk considers the risk of the buyer having the cash to make the earnout payments and is commensurate with a cost of debt over an appropriate term.

The following table sets forth the changes in contingent consideration liabilities (in millions):

Balance at December 31, 2021	$	6.6
Current period additions		3.1
Current period adjustments		2.1
Current period settlements		(4.9)
Foreign currency effect		(0.4)
Balance at September 30, 2022	$	6.5

As part of the 2018 Mestrelab Research, S.L. ("Mestrelab") and 2022 PreOmics acquisitions, the Company entered into agreements with the noncontrolling interest holders that provide the Company with the right to purchase, and the noncontrolling interest holders with the right to sell, the remaining ownerships for cash at contractually defined redemption values. These rights (embedded derivatives) can be accelerated, at discounted redemption values, upon certain events related to post combination employment services. As the options are tied to continued employment, the Company classified the hybrid instruments (noncontrolling interests with embedded derivatives) as liabilities on the consolidated balance sheet. Subsequent to the acquisitions, the carrying value of the hybrid instruments are remeasured to fair value with changes recorded to stock-based compensation expense in proportion to the respective requisite service period vested. The Company classified the hybrid instruments as Level 3 in the fair value hierarchy.

The following table sets forth the changes in hybrid instruments liability (in millions):

Balance at December 31, 2021	$	15.6
Current period additions		20.4
Current period adjustments		10.9
Current period settlements		(11.6)
Foreign currency effect		(4.0)
Balance at September 30, 2022	$	31.3

9. Derivative Instruments and Hedging Activities

Commodity Price Risk Management

The Company has arrangements with certain customers under which it has a firm commitment to deliver copper-based superconductors at a fixed price. In order to minimize the volatility that fluctuations in the price of copper have on the Company's sales of these commodities, the Company enters into commodity hedge contracts. As commodity contracts settle, gains (losses) as a result of changes in fair values are adjusted to the contracts with the customers through revenues.

Foreign Exchange Rate Risk Management

The Company had the following notional amounts outstanding under foreign exchange contracts, cross-currency interest rate swap agreements and long-term debt designated as net investment hedges and the respective fair value of the instruments recorded in the consolidated balance sheets as follows (in millions):

	September 30, 2022		December 31, 2021	
	Notional (in USD)	Fair Value	Notional (in USD)	Fair Value
Derivatives designated as hedging instruments:				
Interest rate cross-currency swap agreements				
Other current assets		$ 15.2		$ 6.4
Other assets		42.0		—
Other current liabilities		—		(5.8)
Other long-term liabilities		(5.8)		(18.1)
	$ 397.0	$ 51.4	$ 504.3	$ (17.5)
Long-term debt				
Long-term debt	753.0	37.6	825.8	(35.1)
Total derivatives designated as hedging instruments	$ 1,150.0	$ 89.0	$ 1,330.1	$ (52.6)
Derivatives not designated as hedging instruments:				
Forward currency contracts				
Other current assets	$ 30.7	$ 0.1	$ 157.7	$ 0.7
Other current liabilities	100.8	(1.2)	23.0	(0.3)
Embedded derivatives in purchase and delivery contracts				
Other current assets	12.5	0.3	8.5	0.2
Fixed price commodity contracts				
Other current assets	—	—	5.5	0.4
Other current liabilities	7.8	(1.1)	—	—
Total derivatives not designated as hedging instruments	$ 151.8	$ (1.9)	$ 194.7	$ 1.0
Total derivatives	$ 1,301.8	$ 87.1	$ 1,524.8	$ (51.6)

In addition, the Company periodically enters into purchase and sales contracts denominated in currencies other than the functional currency of the parties to the transaction. The Company accounts for these transactions separately valuing the "embedded derivative" component of these contracts. The contracts, denominated in currencies other than the functional currency of the transacting parties, amounted to $12.5 million and $8.5 million for the purchase of products at September 30, 2022 and December 31, 2021, respectively. The Company records the changes in the fair value of these embedded derivatives in interest and other income (expense), net in the consolidated statements of income and comprehensive income.

The following is a summary of the gain (loss) included in the consolidated statements of income and comprehensive income related to the derivative instruments described above (in millions):

	Financial Statement Classification	Three Months Ended September 30, 2022	Three Months Ended September 30, 2021	Nine Months Ended September 30, 2022	Nine Months Ended September 30, 2021
Derivatives not designated as hedging instruments					
Forward currency contracts	Interest and other income (expense), net	$ (2.8)	$ (0.9)	$ (6.9)	$ (4.8)
Embedded derivatives in purchase and delivery contracts	Interest and other income (expense), net	0.1	0.1	0.1	(0.3)
		(2.7)	(0.8)	(6.8)	(5.1)
Derivatives designated as cash flow hedging instruments					
Interest rate cross-currency swap agreements	Interest and other income (expense), net	$ 0.3	$ (1.2)	$ (1.3)	$ (3.5)
Derivatives designated as net investment hedging instruments					
Interest rate cross-currency swap agreements	Interest and other income (expense), net	2.2	2.6	6.5	7.6
		2.5	1.4	5.2	4.1
Total		$ (0.2)	$ 0.6	$ (1.6)	$ (1.0)

	Financial Statement Classification	Three Months Ended September 30, 2022	Three Months Ended September 30, 2021	Nine Months Ended September 30, 2022	Nine Months Ended September 30, 2021
Derivatives designated as cash flow hedging instruments					
Interest rate cross-currency swap agreements	Accumulated other comprehensive income, net of tax	$ 7.5	$ 0.9	$ 22.6	$ 11.5
		7.5	0.9	22.6	11.5
Derivatives designated as net investment hedging instruments					
Interest rate cross-currency swap agreements	Accumulated other comprehensive income, net of tax	$ 12.4	$ 7.4	$ 27.4	$ 25.6
Long-term debt	Accumulated other comprehensive income, net of tax	23.0	2.2	55.5	22.2
		35.4	9.6	82.9	47.8
Total		$ 42.9	$ 10.5	$ 105.5	$ 59.3

10. Provision for Income Taxes

The Company accounts for income taxes using the asset and liability approach by recognizing deferred tax assets and liabilities for the expected future tax consequences of differences between the financial statement basis and the tax basis of assets and liabilities, calculated using enacted tax rates in effect for the year in which the differences are expected to be reflected in the tax return. The Company records a valuation allowance to reduce deferred tax assets to the amount that is more likely than not to be realized. In addition, the Company accounts for uncertain tax positions that have reached a minimum recognition threshold.

The income tax provision for the three months ended September 30, 2022 and 2021 was $41.2 million and $20.7 million, respectively, representing effective tax rates of 31.9% and 19.0%, respectively. The income tax provision for the nine months ended September 30, 2022 and 2021 was $93.0 million and $69.5 million, respectively, representing effective tax rates of 31.8% and 25.4%, respectively. The increase in our effective tax rate was primarily due to the impact of U.S. legislation that became effective as of January 1, 2022 limiting the deductibility of research and development expenses and the benefit relating to foreign tax credits and the impact of the Mutual Agreement Procedures ("MAP") resolution. The Company's effective tax rate may change over time as the amount or mix of income and tax changes among the jurisdictions in which the Company is subject to tax.

As of September 30, 2022 and December 31, 2021, the Company had gross unrecognized tax benefits, excluding penalties and interest, of approximately $46.0 million and $51.4 million, respectively, which, if recognized, would result in a reduction of the Company's effective tax rate. The Company recognizes penalties and interest related to unrecognized tax benefits in the provision for income taxes. As of September 30, 2022 and December 31, 2021, approximately $4.0 million and $3.1 million, respectively, of accrued interest and penalties related to uncertain tax positions were included in other long-term liabilities on the Company's unaudited condensed consolidated balance sheets. Penalties and interest of $0.4 million and $0.2 million were recorded in the provision for income taxes for unrecognized tax benefits during the three months ended September 30, 2022 and 2021 respectively. Penalties and interest of $0.9 million and $0.6 million were recorded in the provision for income taxes for unrecognized tax benefits during the nine months ended September 30, 2022 and 2021, respectively.

The Company has been subject to a tax examination in Germany for the years 2009 through 2012 whereby the German tax authorities had imposed additional tax assessments for those years. A final resolution has been reached with the respective tax authorities under the MAP of the United States-Germany income tax treaty during the first quarter of 2022. The related tax assessments were paid in the second quarter of 2022, except for interest and penalties, which remains outstanding.

The Company files tax returns in the United States, which include federal, state and local jurisdictions, and many foreign jurisdictions with varying statutes of limitations. The Company considers Germany, the United States and Switzerland to be its significant tax jurisdictions. The majority of the Company's earnings are derived in Germany and Switzerland. Accounting for the various federal and local taxing authorities, the statutory rates for 2022 are approximately 30.0% and 20.0% for Germany and Switzerland, respectively. The mix of earnings in those two jurisdictions resulted in an increase of 5.9% from the U.S. statutory rate of 21.0% in the nine months ended September 30, 2022.

11. Earnings Per Share

The following table sets forth the computation of basic and diluted weighted average common shares outstanding and net income per common share attributable to Bruker shareholders (in millions, except per share amounts):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Net income attributable to Bruker Corporation	$ 88.1	$ 87.1	$ 199.2	$ 201.4
Weighted average common shares outstanding:				
Weighted average common shares outstanding-basic	147.8	151.4	149.1	151.5
Effect of dilutive securities:				
Stock options and restricted stock units	0.8	1.4	0.8	1.5
	148.6	152.8	149.9	153.0
Net income per common share attributable to Bruker Corporation shareholders:				
Basic	$ 0.60	$ 0.58	$ 1.34	$ 1.33
Diluted	$ 0.59	$ 0.57	$ 1.33	$ 1.32

The following common share equivalents have been excluded from the computation of diluted weighted average common shares outstanding, as their effect would have been anti-dilutive (amounts in millions of shares):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Stock options	0.1	—	0.1	—
Unvested restricted stock units	0.3	—	0.2	—

12. Shareholders' Equity

Share Repurchase Program

In May 2019, the Company's Board of Directors approved a share repurchase plan (the "2019 Repurchase Program") authorizing the purchase of common stock in the amount of up to $300.0 million from time to time, in amounts, at prices, and at such times as management deems appropriate, subject to market conditions, legal requirements and other considerations. During the nine months ended September 30, 2021, the Company purchased a total of 555,602 shares at an aggregate cost of $34.5 million under the 2019 Repurchase Program. The Company completed the 2019 Repurchase Program in April 2021, after reaching the maximum cumulative spend.

In May 2021, the Company's Board of Directors approved a share repurchase plan (the "2021 Repurchase Program") authorizing the purchase of common stock in the amount of up to $500.0 million from time to time over a two-year period, in amounts, at prices, and at such times as management deems appropriate, subject to market conditions, legal requirements and other considerations. During the three months ended September 30, 2022, the Company purchased a total of 1,192,898 shares at an aggregate cost of $72.4 million under the 2021 Repurchase Program. During the nine months ended September 30, 2022, the Company purchased a total of 3,779,694 shares at an aggregate cost of $238.3 million under the 2021 Repurchase Program. During the nine months ended September 30, 2021, the Company purchased a total of 530,703 shares at an aggregate cost of $36.6 million under the 2021 Repurchase Program. No shares were purchased during the three months ended September 30, 2021. At September 30, 2022, $142.9 million remains available for future purchases under the 2021 Repurchase Program.

Accumulated Other Comprehensive Income, net of tax

The following is a summary of comprehensive income (in millions):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Consolidated net income	$ 88.4	$ 88.1	$ 200.2	$ 204.6
Foreign currency translation adjustments	(88.3)	(26.6)	(195.7)	(80.2)
Derivatives designated as hedging instruments, net of tax	42.9	10.5	105.5	59.3
Pension liability adjustments, net of tax	1.6	1.1	3.7	4.4
Comprehensive income	44.6	73.1	113.7	188.1
Less: Comprehensive (loss) income attributable to noncontrolling interests	(0.3)	0.7	(0.5)	0.9
Less: Comprehensive loss attributable to redeemable noncontrolling interests	(0.6)	—	(1.3)	—
Comprehensive income attributable to Bruker Corporation	$ 45.5	$ 72.4	$ 115.5	$ 187.2

The following is a summary of the components of accumulated other comprehensive income (loss) attributable to Bruker Corporation, net of tax (in millions):

	Foreign Currency Translation	Derivatives Designated as Hedging Instruments	Pension Liability Adjustment	Accumulated Other Comprehensive Income (Loss)
Balance at December 31, 2021	$ 63.1	$ (40.1)	$ (31.2)	$ (8.2)
Other comprehensive (loss) income before reclassifications	(193.1)	105.5	2.4	(85.2)
Realized gain on amounts reclassified from other comprehensive income	—	—	1.3	1.3
Net current period other comprehensive (loss) income	(193.1)	105.5	3.7	(83.9)
Balance at September 30, 2022	$ (130.0)	$ 65.4	$ (27.5)	$ (92.1)

Stock-Based Compensation

The Company recorded stock-based compensation expense as follows in the unaudited condensed consolidated statements of income and comprehensive income (in millions):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Cost of product revenue	$ 0.2	$ 0.6	$ 1.0	$ 1.6
Selling, general and administrative	3.3	2.6	9.2	7.6
Research and development	0.4	0.6	1.3	1.6
Total stock-based compensation expense	$ 3.9	$ 3.8	$ 11.5	$ 10.8

In addition to the awards above, the Company recorded stock-based compensation expense within other charges, net of $1.3 million and $0.3 million in the three months ended September 30, 2022 and 2021, respectively, and $11.4 million and $1.1 million in the nine months ended September 30, 2022 and 2021, respectively, related to the Mestrelab and PreOmics acquisitions.

At September 30, 2022, the Company expected to recognize pre-tax stock-based compensation expense of $3.5 million associated with outstanding stock option awards granted under the Company's stock plans over the weighted average remaining service period of 2.7 years. The Company also expects to recognize additional pre-tax stock-based compensation expense of $34.1 million associated with outstanding restricted stock units granted under the Company's 2016 Incentive Compensation Plan over the weighted average remaining service period of 2.7 years.

Stock options to purchase the Company's common stock are periodically awarded to executive officers and other employees of the Company subject to a vesting period of three to four years. The fair value of each option award is estimated on the date of grant using the Black-Scholes option-pricing model. Assumptions regarding volatility, expected life, dividend yield and risk-free interest rates are required for the Black-Scholes model and are presented in the table below:

	Nine Months Ended September 30,	
	2022	2021
Risk-free interest rates	3.03 %	0.62 %
Expected life	4.4 years	4.4 years
Volatility	36 %	34 %
Expected dividend yield	0.32 %	0.20 %

Stock option activity was as follows:

	Shares Subject to Options	Weighted Average Option Price	Weighted Average Remaining Contractual Term (Yrs)	Aggregate Intrinsic Value (in millions) (b)
Outstanding at December 31, 2021	1,355,152	$ 30.98		
Granted	73,365	65.43		
Exercised	(163,439)	24.98		
Forfeited/Expired	(3,886)	22.88		
Outstanding at September 30, 2022	1,261,192	$ 33.78	3.8	$ 27.8
Exercisable at September 30, 2022	1,037,141	$ 27.59	3.3	$ 27.1
Exercisable and expected to vest at September 30, 2022 (a)	1,233,176	$ 33.07	3.8	$ 27.7

(a) Represents the number of vested options at September 30, 2022, plus the number of unvested options at September 30, 2022 that are ultimately expected to vest based on our estimated forfeiture rate.

(b) The aggregate intrinsic value is based on the positive difference between the exercise price of the underlying options and the quoted price of our common stock on September 30, 2022.

The total intrinsic value of options exercised was $6.6 million and $31.8 million for the nine months ended September 30, 2022 and 2021, respectively.

Restricted stock unit activity was as follows:

	Shares Subject to Restriction	Weighted Average Grant Date Value
Outstanding at December 31, 2021	654,470	$ 53.44
Granted	283,681	62.93
Vested	(275,082)	47.61
Forfeited	(25,660)	57.02
Outstanding at September 30, 2022	637,409	$ 60.04

The total fair value of restricted stock units vested was $17.3 million and $26.6 million for the nine months ended September 30, 2022 and 2021, respectively.

13. Other Charges, Net

The components of other charges, net were as follows (in millions):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Information technology transformation costs	$ (0.4)	$ 1.1	$ 2.1	$ 2.6
Restructuring charges	0.5	0.9	3.3	3.6
Acquisition-related expenses, net	1.7	0.6	15.1	3.8
Other	1.2	(0.5)	2.5	(0.5)
Other charges, net	$ 3.0	$ 2.1	$ 23.0	$ 9.5

Restructuring Initiatives

Restructuring charges include charges for various programs that were recorded in the accompanying unaudited condensed consolidated statements of income and comprehensive income. The following table sets forth the restructuring charges (in millions):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Cost of revenues	$ (0.2)	$ 0.2	$ 1.2	$ 1.5
Other charges, net	0.5	0.9	3.3	3.6
Total	$ 0.3	$ 1.1	$ 4.5	$ 5.1

The following table sets forth the changes in restructuring reserves (in millions):

	Total	Severance	Exit Costs	Provisions for Excess Inventory
Balance at December 31, 2021	$ 6.4	$ 3.5	$ 0.3	$ 2.6
Restructuring charges	4.5	2.8	1.7	—
Cash payments	(6.8)	(5.0)	(1.8)	—
Other, non-cash adjustments and foreign currency effect	(1.7)	(0.2)	—	(1.5)
Balance at September 30, 2022	$ 2.4	$ 1.1	$ 0.2	$ 1.1

14. Commitments and Contingencies

In accordance with Accounting Standards Codification ("ASC") Topic 450, Contingencies, the Company accrues anticipated costs of settlement, damages or other costs to the extent specific losses are probable and estimable.

Litigation and Related Contingencies

Lawsuits, claims and proceedings of a nature considered normal to its businesses may be pending from time to time against the Company. Third parties might allege that the Company or its collaborators are infringing their patent rights or that the Company is otherwise violating their intellectual property rights. The Company believes the outcome of pending proceedings, individually and in the aggregate, will not have a material impact on the Company's consolidated financial statements.

On September 25, 2019, in a complaint filed in the District Court of Düsseldorf, Germany, Carl Zeiss Microscopy GmbH, a subsidiary of Carl Zeiss AG (Zeiss), sued Luxendo GmbH (Luxendo), a subsidiary of Bruker Corporation, for infringement of a registered German utility model patent licensed to Zeiss pertaining to one specific Luxendo product category. Zeiss is seeking injunctive relief, an accounting indemnification for damages resulting from infringement, and other related remedies. The Company is vigorously defending against this claim.

In addition, the Company is subject to regulation by national, state and local government agencies in the United States and other countries in which the Company operates. From time to time, the Company is the subject of governmental investigations often involving regulatory, marketing and other business practices. These governmental investigations may result in the commencement of civil and criminal proceedings, fines, penalties and administrative remedies which could have a material adverse effect on the Company's financial position, results of operations and/or liquidity.

As of September 30, 2022 and December 31, 2021, the Company has not recorded any material accruals for potential contingencies.

15. Business Segment Information

The Company has three reportable segments, BSI Life Science, BSI Nano and BEST, as discussed in Note 1 to the unaudited condensed consolidated financial statements.

Revenue and operating income by reportable segment are presented below (in millions):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Revenue:				
BSI Life Science	$ 383.2	$ 380.7	$ 1,094.3	$ 1,074.3
BSI Nano	199.1	174.9	559.8	504.6
BEST	59.3	57.0	178.2	166.0
Eliminations (a)	(2.7)	(3.7)	(10.0)	(10.5)
Total revenue	$ 638.9	$ 608.9	$ 1,822.3	$ 1,734.4
Operating income (loss):				
BSI Life Science	$ 104.2	$ 100.9	$ 260.3	$ 263.4
BSI Nano	35.3	21.8	72.2	55.1
BEST	8.2	7.4	21.4	18.3
Corporate, eliminations and other (b)	(16.4)	(16.9)	(52.2)	(48.9)
Total operating income	$ 131.3	$ 113.2	$ 301.7	$ 287.9

(a) Represents product and service revenue between reportable segments.
(b) Represents corporate costs and eliminations not allocated to the reportable segments.

Total assets by reportable segment are as follows (in millions):

	September 30, 2022	December 31, 2021
Assets:		
BSI Life Science, BSI Nano & Corporate	$ 3,254.0	$ 3,560.5
BEST	89.0	97.9
Eliminations and other (a)	(6.1)	(8.4)
Total assets	$ 3,336.9	$ 3,650.0

(a) Assets not allocated to the reportable segments and eliminations of intercompany transactions.

The Company is unable, without unreasonable effort or expense, to disclose the amount of total assets held by its BSI Life Science and BSI Nano segments as well as the Corporate function and further, the Company’s chief operating decision maker does not receive any asset information by operating segment.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion of our financial condition and results of operations should be read in conjunction with our interim unaudited condensed consolidated financial statements and the notes to those statements included in Part 1, Item 1 of this Quarterly Report on Form 10-Q, and in conjunction with the consolidated financial statements contained in our Annual Report on Form 10-K for the year ended December 31, 2021.

Statements contained in Management's Discussion and Analysis of Financial Condition and Results of Operations and elsewhere in this Quarterly Report on Form 10-Q, which express that we "believe," "anticipate," "plan," "expect," "seek," "may," "will," "intend," "estimate," "should" and similar expressions are intended to identify forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Any forward-looking statements contained herein are based on current expectations but are subject to a number of risks and uncertainties. Forward-looking statements include, but are not limited to, statements regarding the impact of COVID-19 on our business operations, the impact of supply chain challenges, expectations regarding the global economy, inflation, the potential for recession and geopolitical tensions, our intentions regarding our intellectual property, the impact of government contracts and government regulation, our working capital requirements and sufficiency of cash, our competition, the seasonality of our business, the sufficiency of our facilities, our employee relations, the impact of legal or intellectual property proceedings, the impact of changes to tax and accounting rules and changes in law, our anticipated tax rate, our expectations regarding cash dividends, share repurchases, interest expense, interest rate swap agreements, expenses and capital expenditures, the impact of foreign currency exchange rates and changes in commodity prices, the impact of our restructuring initiatives, our expectations regarding backlog and revenue and other risk factors discussed herein and from time to time in our other filings with the Securities and Exchange Commission, or SEC. These and other factors are identified and described in more detail in our filings with the SEC, including, without limitation, our annual report on Form 10-K for the year ended December 31, 2021 and subsequent filings. We expressly disclaim any intent or obligation to update these forward-looking statements other than as required by law.

Non-GAAP Measures

Although our consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States of America (GAAP), we believe describing revenue and expenses, excluding the effects of foreign currency, acquisitions and divestitures, as well as certain other charges, net, provides meaningful supplemental information regarding our performance. We rely internally on certain measures that are not calculated according to GAAP. These measures are organic revenue, free cash flow, non-GAAP gross profit margin and non-GAAP operating margin. Our management believes that these financial measures provide relevant and useful information that is widely used by equity analysts, investors and competitors in our industry, as well as by our management, in assessing both consolidated and business unit performance. We define the term organic revenue as GAAP revenue excluding the effect of foreign currency translation changes and the effect of acquisitions and divestitures. We define the term non-GAAP gross profit margin as GAAP gross profit margin with certain non-GAAP measures excluded and non-GAAP operating margin as GAAP operating margin with certain non-GAAP measures excluded. These non-GAAP measures exclude costs related to restructuring actions, acquisition and related integration expenses, amortization of acquired intangible assets, costs associated with our global information technology transition initiatives, and other non-operational costs and we believe these are useful measures to evaluate our continuing business.

We define free cash flow as GAAP net cash provided by operating activities less additions to property, plant, and equipment. We believe free cash flow is a useful measure to evaluate our business as it indicates the amount of cash generated after additions to property, plant, and equipment which is available for, among other things, investments in our business, acquisitions, share repurchases, dividends and repayment of debt. We regularly use these non-GAAP financial measures internally to understand, manage, and evaluate our business results and make operating decisions. We also measure our employees and compensate them, in part, based on such non-GAAP measures and use this information for our planning and forecasting activities. These measures may also be useful to investors in evaluating the underlying operating performance of our business. The presentation of these non-GAAP financial measures is not intended to be a substitute for, or superior to, the financial information prepared and presented in accordance with GAAP and may be different from non-GAAP financial measures used by other companies, and therefore, may not be comparable among companies.

OVERVIEW

We are a developer, manufacturer and distributor of high-performance scientific instruments and analytical and diagnostic solutions that enable our customers to explore life and materials at microscopic, molecular and cellular levels. Our corporate headquarters are located in Billerica, Massachusetts. We maintain major technical and manufacturing centers in Europe, Asia and North America and we have sales offices located throughout the world. Bruker is organized into three reportable segments: the BSI Life Science segment (comprised of the Bruker BioSpin Group and the Bruker CALID Group), the BSI Nano segment and the Bruker Energy & Supercon Technologies (BEST) segment.

Revenue for the three months ended September 30, 2022 increased by $30.0 million, or 4.9%, to $638.9 million, compared to $608.9 million for the comparable period in 2021. Included in revenue was a decrease of approximately $55.0 million from unfavorable foreign exchange rate movements, partially offset by an increase of $7.6 million from acquisitions. Excluding the unfavorable effects of foreign exchange rate movements and our recent acquisitions, our organic revenue, a non-GAAP measure, increased $77.4 million. Revenue increases were driven by strong demand for our differentiated high-value scientific instruments and life science solutions compared to the same period in 2021.

Revenue for the nine months ended September 30, 2022 increased by $87.9 million, or 5.1% to $1,822.3 million, compared to $1,734.4 million for the comparable period in 2021. Included in revenue was a decrease of approximately $120.5 million from unfavorable foreign exchange rate movements, partially offset by an increase of $22.7 million from acquisitions. Excluding the unfavorable effects of foreign exchange rate movements and our recent acquisitions, our organic revenue, a non-GAAP measure, increased $185.7 million. Revenue increases were driven by strong demand for our differentiated high-value scientific instruments and life science solutions compared to the same period in 2021.

Our gross profit margin increased to 52.5% during the three months ended September 30, 2022, as compared to 50.7% in the same period in 2021, the result of favorable mix, pricing, volume leverage and net favorable impact of foreign exchange rate movements, partially offset by supply chain and logistics challenges compared to 2021.

Our gross profit margin increased to 51.6% during the nine months ended September 30, 2022, as compared to 50.0% in the same period in 2021, the result of favorable mix, pricing, volume leverage and net favorable impact of foreign exchange rate movements, partially offset by supply chain and logistics challenges compared to 2021.

Our income tax provision in the three months ended September 30, 2022 and 2021 was $41.2 million and $20.7 million, respectively, representing effective tax rates of 31.9% and 19.0%, respectively. Our income tax provision in the nine months ended September 30, 2022 and 2021 was $93.0 million and $69.5 million, respectively, representing effective tax rates of 31.8% and 25.4%, respectively. The increase in our effective tax rate was primarily due to the impact of U.S. tax legislation that became effective in 2022 limiting the deductibility of research and development expenses and the benefit relating to stock compensation deductions in the prior year period.

Diluted earnings per share for the three months ended September 30, 2022 was $0.59, an increase of $0.02 compared to $0.57 per share in the same period in 2021. Diluted earnings per share for the nine months ended September 30, 2022 was $1.33, an increase of $0.01 compared to $1.32 per share in the same period in 2021. The increase in diluted earnings per share in both the three months and nine months ended September 30, 2022 was primarily driven by higher net income and offset by acquisition related hybrid instrument liability adjustments recognized during the periods.

The following table presents a reconciliation from net cash provided by operating activities, which is the most directly comparable GAAP operating financial measure, to free cash flow as used by management (in millions):

	Nine Months Ended September 30, 2022	Nine Months Ended September 30, 2021
GAAP net cash provided by operating activities	$ 102.9	$ 143.8
Less: purchases of property, plant and equipment	(94.6)	(63.6)
Free cash flow	$ 8.3	$ 80.2

During the three months ended September 30, 2022, the BEST reportable segment entered into a purchase and sale agreement to acquire the land and buildings being leased at its Hanau, Germany location for a total purchase price, inclusive of closing costs, of Euro 34.2 million ($33.8 million).

The following table presents reconciliations from gross profit and gross profit margin, which are the most directly comparable GAAP operating performance measures, to non-GAAP gross profit and non-GAAP gross profit margin as used by management (in millions):

	Three Months Ended September 30,				Nine Months Ended September 30,			
	2022		2021		2022		2021	
Gross profit	$ 335.3	52.5%	$ 308.7	50.7%	$ 939.8	51.6%	$ 868.0	50.0%
Non-GAAP adjustments:								
Restructuring costs	(0.3)	—	0.2	—	1.1	0.1%	1.6	0.1%
Acquisition-related costs	0.1	—	0.1	—	0.3	—	0.1	—
Purchased intangible amortization	4.5	0.7%	5.3	0.9%	13.5	0.7%	15.0	0.9%
Other costs	0.2	—	0.6	0.1%	3.1	0.2%	0.1	—
Non-GAAP gross profit	$ 339.8	53.2%	$ 314.9	51.7%	$ 957.8	52.6%	$ 884.8	51.0%

Our non-GAAP gross profit margin was 53.2% and 51.7% in the three months ended September 30, 2022 and 2021, respectively. Our non-GAAP gross profit margin was 52.6% and 51.0% in the nine months ended September 30, 2022 and 2021, respectively. The increases in our non-GAAP gross profit margins in both the three months and nine months ended September 30, 2022 were driven by favorable mix, pricing, volume leverage and net favorable impact of foreign exchange rate movements, partially offset by supply chain and logistics challenges compared to 2021.

The following table presents reconciliations from operating income and operating margin, which are the most directly comparable GAAP operating performance measures, to non-GAAP operating income and non-GAAP operating margin as used by management (in millions):

	Three Months Ended September 30,				Nine Months Ended September 30,			
	2022		2021		2022		2021	
Operating income	$ 131.3	20.6%	$ 113.2	18.6%	$ 301.7	16.6%	$ 287.9	16.6%
Non-GAAP adjustments:								
Restructuring costs	0.2	—	1.1	0.2%	4.4	0.2%	5.2	0.3%
Acquisition-related costs	1.8	0.3%	0.7	0.1%	15.4	0.9%	3.9	0.2%
Purchased intangible amortization	8.9	1.4%	9.2	1.5%	27.5	1.5%	27.2	1.6%
Other costs	1.0	0.1%	1.2	0.2%	7.7	0.4%	2.2	0.1%
Non-GAAP operating income	$ 143.2	22.4%	$ 125.4	20.6%	$ 356.7	19.6%	$ 326.4	18.8%

Our non-GAAP operating margin was 22.4% and 20.6% in the three months ended September 30, 2022 and 2021, respectively. Our non-GAAP operating margin was 19.6% and 18.8% in the nine months ended September 30, 2022 and 2021, respectively. Our non-GAAP operating margin increased in 2022 due to the gross margin expansion, partially offset by increased investments in sales and marketing and in our research and development capabilities, as compared to 2021.

We can experience quarter-to-quarter fluctuations in our operating results as a result of various factors, some of which are outside our control, such as:

- the impact of the COVID-19 global pandemic, inflation, the threat of recession, financial liquidity, currency volatility or devaluation and geopolitical tensions on our customers, supply chain or manufacturing capabilities;
- potential energy shortages in Europe where we have significant operations and overall higher energy and transportation costs;
- the impact of certain weather-related disruptions;
- the timing of governmental stimulus programs and academic research budgets;
- the time it takes between the date customer orders and deposits are received, systems are shipped and accepted by our customers and full payment is received;
- foreign currency exchange rates;
- changes in raw material, component and logistics costs;
- the time it takes for us to receive critical materials to manufacture our products;
- general economic conditions, including the impact of COVID-19 or other factors on the global economy;
- the time it takes to satisfy local customs requirements and other export/import requirements;
- the time it takes for customers to construct or prepare their facilities for our products;
- the time required to obtain governmental licenses;
- our ability to identify suitable acquisition targets and successfully integrate and manage acquired business; and
- costs related to acquisitions of technology or businesses.

Several of these factors have in the past affected and continue to affect the amount and timing of revenue recognized on sales of our products and receipt of related payments and will likely continue to do so in the future. Accordingly, our operating results in any particular quarter may not necessarily be an indication of any future quarter's operating performance. The COVID-19 pandemic continues to present a challenging operating environment. Throughout the COVID-19 pandemic, we have been focused on and continue to focus on three key priorities: the health and safety of our employees, customers and partners; maintaining business continuity and service levels for our customers; and delivering our enabling research and diagnostic products to help fight the pandemic, and to support other essential priorities of our society.

Health and safety of our valued employees, customers and partners

Although we expect that COVID-19 vaccinations and boosters broadly distributed and administered will continue to improve conditions, the COVID-19 pandemic has had and if conditions deteriorate again, could continue to have an adverse effect on the United States and global economies, as well as on aspects of our operations and those of third parties on whom we rely. In response to the COVID-19 pandemic, we implemented strict social distancing, enhanced cleaning protocols and other preventative measures in our major facilities to ensure the health and safety of our valued employees, customers and partners - and we may take further actions, or be required to take further actions, that are in the best interests of our employees, customers and partners. While many of our office colleagues worked remotely at the height of the pandemic and through subsequent surges, we placed enhanced focus on the safety of our service organization and factory employees for whom work from home was not feasible. Where customer sites were accessible and open, our field service organizations operated under social distancing protocols with proper face coverings to ensure the safety of customer sites, when our employees needed to be on site. Consistent with local government and health organization guidelines, many of our facilities have started a gradual return to the office for employees who have been working remotely. Although we are adhering with applicable government and health organization guidelines, an outbreak of COVID-19 at one or more of our facilities could cause a facility shutdown and a reduction in our workforce. As we continue to monitor developments and make appropriate adjustments, as needed, employee and visitor health and safety will remain our paramount concern.

Maintaining business continuity and service levels to our customers

Ensuring our ability to supply our enabling technologies and solutions and maintaining high service levels for our customers is another top priority for Bruker. In late March and during parts of April 2020, several of our manufacturing sites underwent temporary controlled shutdowns or were operating at reduced capacity to implement new safety protocols, comply with local rules, and manage cost and inventory levels. These sites thereafter ramped back up with expanding capacity and productivity levels. However, with any resurgence of the virus or the emergence of additional variants and subvariants, particularly those that are resistant to existing vaccines, we may again need to consider temporary controlled shutdowns or reduced capacity measures. In addition, we are continuing capital investments in production facilities for efficiencies and expansion. We continue to encounter supply chain risks associated with the pandemic, the global economy, including inflation, the threat of recession, financial liquidity, currency volatility or devaluation and geopolitical tensions, and the worldwide shortage of semiconductor chips, components and raw materials, such as copper.

Delivering enabling research and diagnostic products to help fight the pandemic and to support other essential priorities of our society

Bruker is providing critical technologies and solutions to help combat the COVID-19 pandemic, most notably our Microbiology and infectious disease diagnostics portfolio and our nuclear magnetic resonance and mass spectrometry systems which are used in critical disease, therapeutic and vaccine research.

The COVID-19 global pandemic has driven volatility and uncertainty in global markets and has in the past affected our operations significantly. We continue to work to manage the impact of COVID-19 on our operations; however, the full extent to which any resurgence of the virus, the emergence of any new variants and subvariants, or the availability and effectiveness of COVID-19 vaccines will impact our business, directly or indirectly, cannot accurately be predicted at this time. We continue to monitor the impact of COVID-19 on our business and our supply chain and respond accordingly.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

This discussion and analysis of our financial condition and results of operations is based upon our unaudited condensed consolidated financial statements, which have been prepared in accordance with GAAP. The preparation of these financial statements requires that we make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and reported amounts of revenues and expenses during the reporting period. On an ongoing basis, management evaluates its estimates and judgments, including those related to: revenue recognition; stock-based compensation expense; restructuring and other related charges; income taxes, including the recoverability of deferred tax assets; allowances for doubtful accounts; inventory reductions for excess and obsolete inventories; estimated fair values of long-lived assets used to measure the recoverability of long-lived assets; intangible assets and goodwill; expected future cash flows used to measure the recoverability of intangible assets and long-lived assets; warranty costs; derivative financial instruments; and contingent liabilities. We base our estimates and judgments on our historical experience, current market and economic conditions, industry trends, and other assumptions that we believe are reasonable and form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results could differ from these estimates and historical experience.

We believe the following critical accounting policies and estimates to be both those most important to the portrayal of our financial position and results of operations and those that require the most estimation and subjective judgment:

- Revenue recognition;
- Income taxes;
- Inventories;
- Goodwill, other intangible assets and other long-lived assets; and
- Business combinations.

For a further discussion of our critical accounting policies, please refer to our Annual Report on Form 10-K for the year ended December 31, 2021.

RESULTS OF OPERATIONS

Three Months Ended September 30, 2022 compared to the Three Months Ended September 30, 2021

Consolidated Results

The following table presents our results (in millions):

	Three Months Ended September 30, 2022	Three Months Ended September 30, 2021	Dollar Change	Percentage Change
Product revenue	$ 536.6	$ 508.3	$ 28.3	5.6 %
Service revenue	100.9	99.0	1.9	1.9 %
Other revenue	1.4	1.6	(0.2)	(12.5)%
Total revenue	638.9	608.9	30.0	4.9 %
Cost of product revenue	240.5	243.5	(3.0)	(1.2)%
Cost of service revenue	63.1	56.5	6.6	11.7 %
Cost of other revenue	—	0.2	(0.2)	(100.0)%
Total cost of revenue	303.6	300.2	3.4	1.1 %
Gross profit	335.3	308.7	26.6	8.6 %
Operating expenses:				
Selling, general and administrative	144.8	141.3	3.5	2.5 %
Research and development	56.2	52.1	4.1	7.9 %
Other charges, net	3.0	2.1	0.9	42.9 %
Total operating expenses	204.0	195.5	8.5	4.3 %
Operating income	131.3	113.2	18.1	16.0 %
Interest and other income (expense), net	(2.0)	(4.4)	2.4	(54.5)%
Income before income taxes, equity in income of unconsolidated investee, net of tax, and noncontrolling interests in consolidated subsidiaries	129.3	108.8	20.5	18.8 %
Income tax provision	41.2	20.7	20.5	99.0 %
Equity in income of unconsolidated investee, net of tax	0.3	—	0.3	
Consolidated net income	88.4	88.1	0.3	0.3 %
Net income attributable to noncontrolling interests in consolidated subsidiaries	0.3	1.0	(0.7)	(70.0)%
Net income attributable to Bruker Corporation	$ 88.1	$ 87.1	$ 1.0	1.1 %

Revenue

Revenue increases were driven by strong demand for our differentiated instruments and solutions offset by the negative impact of foreign currency translation. The Bruker BioSpin Group revenue for the three months ended September 30, 2022 was $175.7 million, a decrease of 5.8% compared to the same period in 2021. The decrease related primarily to the negative impact of foreign currency translation and the negative impact of material availability on revenue execution. The Bruker CALID Group revenue for the three months ended September 30, 2022 was $207.5 million, an increase of 6.8% compared to the same period in 2021. The increase in revenues was a direct result of strong demand for our differentiated instruments, partially offset by supply chain constraints and the negative impact of foreign currency translation. BSI Nano revenue for the three months ended September 30, 2022 was $199.1 million, an increase of 13.8% compared to the same period in 2021. The increase in BSI Nano revenue was driven by strong demand in its industrial and semiconductor metrology markets. The BEST revenue for the three months ended September 30, 2022 was $59.3 million, an increase of 4.0% compared to the same period in 2021, driven by strong superconductor demand from our magnetic resonance imaging original equipment manufacturer customers.

Geographically in the third quarter 2022, our North American revenue grew 17.7%, Asia Pacific increased by 2.7%, while European revenue declined by 3.5% compared to the same period in 2021.

Gross Profit

The increase in gross profit in the three months ended September 30, 2022, as compared to the same period in 2021, was a result of favorable mix, pricing, volume leverage and net favorable impact of foreign exchange rate movements, partially offset by supply chain and logistics challenges and inflationary margin challenges compared to 2021.

Selling, General and Administrative

Our selling, general and administrative expenses for the three months ended September 30, 2022 decreased to 22.7% of total revenue, from 23.2% of total revenue for the comparable period in 2021. The decrease as a percentage of revenue was a result of cost control measures to manage the current inflation challenges as well as foreign currency effects.

Research and Development

Our research and development expenses for the three months ended September 30, 2022 increased to 8.8% of total revenue from 8.6% of total revenue for the comparable period in 2021. The increase as a percentage of revenue is a result of our increased investment in research and development capabilities.

Other Charges, Net

Other charges, net for the three months ended September 30, 2022 consisted of $1.7 million of acquisition-related charges related to acquisitions completed in 2022 and 2021, $0.5 million of restructuring costs, $(0.4) million of costs associated with our global information technology (IT) transformation activities, and $1.2 million of other charges. Acquisition-related charges relate primarily to integration cost of newly acquired entities and the cost of post combination employment services in the period acquired. The IT transformation initiative is a multi-year project aimed at updating and integrating our global enterprise resource planning and human resource information systems.

Other charges, net for the three months ended September 30, 2021 consisted of $1.1 million of costs associated with our global information technology (IT) transformation activities, $0.9 million of restructuring costs and $0.6 million of acquisition-related charges to acquisitions completed in 2021 and 2020.

Operating Income

The increase in operating income was due to higher gross profit resulting from differentiated instruments and solutions offset by certain sales and marketing investments and investments research and development capabilities.

Interest and Other Income (Expense), Net

The decline in interest and other income (expense), net in the three months ended September 30, 2022, as compared to the same period in 2021 was primarily due to lower foreign currency exchange losses driven by strengthening of the U.S. dollars against other currencies.

Income Tax Provision

The 2022 and 2021 effective tax rates were estimated using projected annual pre-tax income on a jurisdictional basis. Expected tax benefits, including tax credits and incentives, the impact of changes to valuation allowances and the effect of jurisdictional differences in statutory tax rates were also considered in the calculation.

The effective tax rates for the three months ended September 30, 2022 and 2021 were 31.9% and 19.0%, respectively. The increase in our effective tax rate was primarily due to the impact of U.S. tax legislation that became effective in 2022 limiting the deductibility of research and development expenses and the benefit related to stock compensation deductions in the prior year period.

Equity in Income of Unconsolidated Investee, net of tax

Equity in Income of Unconsolidated Investee, net of tax represents the Company's proportional share of the earnings or losses as reported by equity-method investees.

Net Income Attributable to Noncontrolling Interests

The net income attributable to noncontrolling interests represented the minority shareholders' proportionate share of the net income recorded by our majority-owned subsidiaries.

Reportable Segment Revenue

The following table presents revenue, change in revenue and revenue growth by reportable segment (in millions):

	Three Months Ended September 30, 2022	Three Months Ended September 30, 2021	Dollar Change	Percentage Change
BSI Life Science	$ 383.2	$ 380.7	$ 2.5	0.7 %
BSI Nano	199.1	174.9	24.2	13.8 %
BEST	59.3	57.0	2.3	4.0 %
Eliminations (a)	(2.7)	(3.7)	1.0	
Total revenue	$ 638.9	$ 608.9	$ 30.0	4.9 %

(a) Represents product and service revenue between reportable segments.

For financial reporting purposes, we aggregate the Bruker BioSpin Group and Bruker CALID Group as the BSI Life Science segment. This aggregation reflects the similar economic characteristics, production processes, customer services provided, types and classes of customers, methods of distribution and regulatory environments.

The increase in revenue for the BSI Life Science segment in the three months ended September 30, 2022 was due to strong demand for our differentiated instruments, partially offset by supply chain constraints and the negative impact of foreign currency translation. The increase in revenue for the BSI Nano segment was driven by strong demand in industrial research and semiconductor customers. The increase in revenue for the BEST segment resulted from strong superconductor demand by our magnetic resonance imaging original equipment manufacturer customers.

Operating Income

The following table presents operating income and operating margins on revenue by reportable segment (in millions):

	Three Months Ended September 30, 2022		2021	
	Operating Income (Loss)	Percentage of Segment Revenue	Operating Income (Loss)	Percentage of Segment Revenue
BSI Life Science	$ 104.2	27.2 %	$ 100.9	26.5 %
BSI Nano	35.3	17.7 %	21.8	12.5 %
BEST	8.2	13.8 %	7.4	13.0 %
Corporate, eliminations and other (a)	(16.4)		(16.9)	
Total operating income	$ 131.3	20.6 %	$ 113.2	18.6 %

(a) Represents corporate costs and eliminations not allocated to the reportable segments.

The operating margin increases in the BSI Life Science and BSI Nano segments was primarily due to higher gross margin resulting from favorable mix, pricing, volume leverage and net favorable impact of foreign exchange rate movements offset by planned sales, marketing and research and development investments, supply chain and logistics challenges and inflationary margin challenges in 2022, as compared to 2021. The operating margin increase in the BEST segment was primarily driven by restructuring activities in the prior year period partially, offset by inflationary margin challenges in 2022.

Consolidated Results

Nine Months Ended September 30, 2022 compared to the Nine Months Ended September 30, 2021

The following table presents our results (in millions):

	Nine Months Ended September 30, 2022	Nine Months Ended September 30, 2021	Dollar Change	Percentage Change
Product revenue	$ 1,512.8	$ 1,441.2	$ 71.6	5.0%
Service revenue	305.0	287.8	17.2	6.0%
Other revenue	4.5	5.4	(0.9)	(16.7)%
Total revenue	1,822.3	1,734.4	87.9	5.1%
Cost of product revenue	699.6	700.4	(0.8)	(0.1)%
Cost of service revenue	182.8	165.3	17.5	10.6%
Cost of other revenue	0.1	0.7	(0.6)	(85.7)%
Total cost of revenue	882.5	866.4	16.1	1.9%
Gross profit	939.8	868.0	71.8	8.3%
Operating expenses:				
Selling, general and administrative	442.7	407.9	34.8	8.5%
Research and development	172.4	162.7	9.7	6.0%
Other charges, net	23.0	9.5	13.5	142.1%
Total operating expenses	638.1	580.1	58.0	10.0%
Operating income	301.7	287.9	13.8	4.8%
Interest and other income (expense), net	(8.8)	(13.8)	5.0	(36.2)%
Income before income taxes, equity in income of unconsolidated investee, net of tax, and noncontrolling interests in consolidated subsidiaries	292.9	274.1	18.8	6.9%
Income tax provision	93.0	69.5	23.5	33.8%
Equity in income of unconsolidated investee, net of tax	0.3	—	0.3	
Consolidated net income	200.2	204.6	(4.4)	(2.2)%
Net income attributable to noncontrolling interests in consolidated subsidiaries	1.0	3.2	(2.2)	(68.8)%
Net income attributable to Bruker Corporation	$ 199.2	$ 201.4	$ (2.2)	(1.1)%

Revenue

Revenue increases were driven by strong demand for our differentiated instruments and solutions offset by the negative impact of foreign currency translation. The Bruker BioSpin Group revenue for the nine months ended September 30, 2022 was $493.3 million, a slight decrease of 0.2% compared to the same period in 2021. The decrease was driven by the negative impact of foreign currency translation, mostly offset by growth in demand across end markets. The Bruker CALID Group revenue for the nine months ended September 30, 2022 was $601.0 million, an increase of 3.6% compared to the same period in 2021. The increase in revenues was a direct result of strong demand for our differentiated instruments, partially offset by supply chain constraints and the negative impact of foreign currency translation. BSI Nano revenue for the nine months ended September 30, 2022 was $559.8 million, an increase of 10.9% compared to the same period in 2021. The increase in BSI Nano revenue was driven by strong demand in its industrial and semiconductor metrology markets. The BEST revenue for the nine months ended September 30, 2022 was $178.2 million, an increase of 7.3% compared to the same period in 2021, driven by strong superconductor demand from major medical magnetic resonance imaging manufacturers.

Geographically in the nine months ended September 30, 2022, our North American revenue grew 19.0%, Asia Pacific increased by 6.9%, while European revenue declined by 6.7% compared to the same period in 2021.

Gross Profit

The increase in gross profit in the nine months ended September 30, 2022, as compared to the same period in 2021, was a result of favorable mix, volume leverage, price realization and net favorable impact of foreign exchange rate movements, partially offset by supply chain, logistics and inflationary challenges compared to 2021.

Selling, General and Administrative

Our selling, general and administrative expenses for the nine months ended September 30, 2022 increased to 24.3% of total revenue, from 23.5% of total revenue for the comparable period in 2021. The increase as a percentage of revenue was a result of investments in our commercial infrastructure and driven by higher freight, logistics and commission costs.

Research and Development

Our research and development expenses for the nine months ended September 30, 2022 increased to 9.5% of total revenue, from 9.4% of total revenue for the comparable period in 2021. The consistent percentage relates to higher overall revenues in addition to our increased investment in research and development capabilities period over period.

Other Charges, Net

Other charges, net for the nine months ended September 30, 2022 consisted of $15.1 million of acquisition-related charges related to acquisitions completed in 2022 and 2021, $3.3 million of restructuring costs, $2.1 million of costs associated with our global information technology (IT) transformation activities, $1.8 million of other charges, and $0.7 million related to suspension of operations in Russia.

Other charges, net for the nine months ended September 30, 2021 consisted of $3.8 million of acquisition-related charges to acquisitions completed in 2021 and 2020, $3.6 million of restructuring costs and $2.6 million of costs associated with our global IT transformation activities.

Operating Income

The increase in operating income was due to higher gross profit resulting from favorable mix, volume leverage, price realization and net favorable impact of foreign exchange rate movements offset by planned sales and marketing investments, supply chain and logistics challenges and inflationary margin challenges in 2022, as compared to 2021, and investments in research and development capabilities.

Interest and Other Income (Expense), Net

The decline in interest and other income (expense), net in the nine months ended September 30, 2022, as compared to the same period in 2021 was primarily due to lower foreign currency exchange losses driven by strengthening of the U.S. dollars against other currencies as well as fair value gains from strategic investments.

Income Tax Provision

The 2022 and 2021 effective tax rates were estimated using projected annual pre-tax income on a jurisdictional basis. Expected tax benefits, including tax credits and incentives, the impact of changes to valuation allowances and the effect of jurisdictional differences in statutory tax rates were also considered in the calculation.

The effective tax rates for the nine months ended September 30, 2022 and 2021 were 31.8% and 25.4% respectively. The increase in our effective tax rate was primarily due to the impact of U.S. tax legislation that became effective in 2022 limiting the deductibility of research and development expenses and the benefit related to stock compensation deductions in the prior year period.

Equity in Income of Unconsolidated Investee, net of tax

Equity in Income of Unconsolidated Investee, net of tax represents the Company's proportional share of the earnings or losses as reported by equity-method investees.

Net Income Attributable to Noncontrolling Interests

The net income attributable to noncontrolling interests represented the minority shareholders' proportionate share of the net income recorded by our majority-owned subsidiaries.

Reportable Segment Revenue

The following table presents revenue, change in revenue and revenue growth by reportable segment (in millions):

	Nine Months Ended September 30, 2022	Nine Months Ended September 30, 2021	Dollar Change	Percentage Change
BSI Life Science	$ 1,094.3	$ 1,074.3	$ 20.0	1.9 %
BSI Nano	559.8	504.6	55.2	10.9 %
BEST	178.2	166.0	12.2	7.3 %
Eliminations (a)	(10.0)	(10.5)	0.5	
Total revenue	$ 1,822.3	$ 1,734.4	$ 87.9	5.1 %

(a) Represents product and service revenue between reportable segments.

The increase in revenue for the BSI Life Science segment in the nine months ended September 30, 2022 was due to strong demand for our differentiated instruments, partially offset by supply chain constraints and the negative impact of foreign currency translation. The increase in revenue for the BSI Nano segment was driven by strong demand in industrial research and semiconductor customers. The increase in revenue for the BEST segment resulted from strong superconductor demand by our magnetic resonance imaging original equipment manufacturer customers.

Operating Income

The following table presents operating income and operating margins on revenue by reportable segment (in millions):

	Nine Months Ended September 30,			
	2022		2021	
	Operating Income (Loss)	Percentage of Segment Revenue	Operating Income (Loss)	Percentage of Segment Revenue
BSI Life Science	$ 260.3	23.8 %	$ 263.4	24.5 %
BSI Nano	72.2	12.9 %	55.1	10.9 %
BEST	21.4	12.0 %	18.3	11.0 %
Corporate, eliminations and other (a)	(52.2)		(48.9)	
Total operating income	$ 301.7	16.6 %	$ 287.9	16.6 %

(a) Represents corporate costs and eliminations not allocated to the reportable segments.

The operating margin decrease in the BSI Life Science and increase in the BSI Nano segments was primarily due to higher gross margin resulting from differentiated products and operating leverage, partially offset by planned commercial investments. The operating margin increase in the BEST segment resulted from higher revenue.

LIQUIDITY AND CAPITAL RESOURCES

We anticipate that our existing cash and credit facilities will be sufficient to support our operating and investing needs for at least the next twelve months. Our future cash requirements could be affected by acquisitions that we may complete, purchases of our common stock or the payment of dividends in the future. Historically, we have financed our growth and liquidity needs through cash flow generation from operations and a combination of debt financings and issuances of common stock. In the future, there are no assurances that we will continue to generate cash flow from operations or that additional financing alternatives will be available to us, if required, or if available, will be obtained on terms favorable to us.

Cash, cash equivalents and short-term investments at September 30, 2022 and December 31, 2021 totaled $626.2 million and $1,168.2 million, respectively, of which $535.9 million and $646.9 million, respectively, related to cash, cash equivalents and short-term investments held outside of the U.S. in our foreign subsidiaries, most significantly in the Netherlands, Switzerland and Hong Kong.

The following table presents our cash flows from operating activities, investing activities and financing activities for the periods presented (in millions):

	Nine Months Ended September 30,	
	2022	2021
Net cash provided by operating activities	$ 102.9	$ 143.8
Net cash used in investing activities	(102.3)	(143.8)
Net cash used in financing activities	(379.2)	(85.6)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(63.8)	(23.4)
Net change in cash, cash equivalents and restricted cash	$ (442.4)	$ (109.0)

Cash provided by operating activities during the nine months ended September 30, 2022 resulted primarily from consolidated net income adjusted for non-cash items of $273.6 million, partially offset by a change in operating assets and liabilities, net of acquisitions and divestitures of $170.7 million. The decrease was primarily due to strategic inventory management to handle supply chain challenges, timing of tax payments partially offset by customer advances received during the period related to new orders and deferral of revenue due to supply chain challenges. Cash provided by operating activities during the nine months ended September 30, 2021 resulted from consolidated net income adjusted for non-cash items of $300.9 million, partially offset by a change in operating assets and liabilities, net of acquisitions and divestitures of $157.1 million. The primary increase is a result of increased net income driven by the increase in revenue, gross profit and operating profit as a result of the rebound in our business and end markets. The decrease in operating assets and liabilities, net of acquisitions and divestitures for the nine months ended September 30, 2021 was primarily due to strategic inventory management to handle supply chain challenges, timing of tax payment payables and increased revenues at the end of the period.

Cash used in investing activities during the nine months ended September 30, 2022 resulted primarily from acquisitions of $85.5 million, purchases of property, plant and equipment of $94.6 million, and strategic investments of $40.8 million, offset by maturity of short-term investments of $100.0 million and $13.8 million of net proceeds from sales of property, plant and equipment. Cash used in investing activities during the nine months ended September 30, 2021 resulted primarily from purchases of property, plant and equipment of $63.6 million, purchases of short-term investments of $48.0 million and acquisitions of $45.0 million offset by $8.6 million of net proceeds from our cross-currency swap agreements.

Net cash used in financing activities during the nine months ended September 30, 2022 was primarily from cash paid for purchases of common stock under our repurchase program of $236.8 million, repayment of our 2012 Note Purchase Agreement of $105.0 million and $22.4 million for the payment of dividends. Net cash used in financing activities during the nine months ended September 30, 2021 was primarily from cash paid for purchases of common stock under our repurchase program of $71.1 million and $18.2 million for the payment of dividends.

Share Repurchase Program

In May 2019, our Board of Directors approved our share repurchase program (the “2019 Repurchase Program”) under which repurchases of common stock in the amount of up to $300.0 million were authorized to occur from time to time, in amounts, at prices, and at such times as we deem appropriate, subject to market conditions, legal requirements and other considerations. During the nine months ended September 30, 2021, we purchased a total of 555,602 shares at an aggregate cost of $34.5 million under the 2019 Repurchase Program. We completed the 2019 Repurchase Program in April 2021, after reaching the maximum cumulative spend.

In May 2021, our Board of Directors approved a share repurchase program (the “2021 Repurchase Program”) authorizing the purchase of up to $500.0 million of our common stock over a two-year period from time to time, in amounts, at prices, and at such times as we deem appropriate, subject to market conditions, legal requirements and other considerations. During the three months ended September 30, 2022, we purchased 1,192,898 shares at an aggregate cost of $72.4 million under the 2021 Repurchase Program. During the nine months ended September 30, 2022, we purchased a total of 3,779,694 shares at an aggregate cost of $238.3 million under the 2021 Repurchase Program. During the nine months ended September 30, 2021, we purchased a total of 530,703 shares at an aggregate cost of $36.6 million under the 2021 Repurchase Program. No shares were purchased during the three months ended September 30, 2021. At September 30, 2022, $142.9 million remains available for future purchase under the 2021 Repurchase Program. We intend to fund any additional repurchases from cash on hand, future cash flows from operations and available borrowings under our revolving credit facility. The purchased shares are reflected within Treasury stock in the accompanying unaudited condensed consolidated balance sheets.

Credit Facilities

On December 7, 2021, we entered into a note purchase agreement to issue and sell CHF 300 million aggregate principal amount of 0.88% series A senior notes and EUR 150 million aggregate principal amount of 1.03% series B senior notes due December 8, 2031. We designated our CHF 300 million series A senior notes as a hedge in our net investment in our Swiss Franc denominated net assets. We designated our EUR 150 million series B senior notes as a hedge in our net investment in our EUR denominated net assets. Proceeds of the notes will be used for general corporate purposes.

On December 11, 2019, we entered into (1) a new revolving credit agreement to establish a new revolving credit facility in the aggregate principal amount of $600 million; (2) a term loan agreement to establish a new term loan facility in the aggregate principal amount of $300 million; and (3) a note purchase agreement to issue and sell CHF 297 million aggregate principal amount of 1.01% senior notes due December 11, 2029. Floating interest rates under the term loan were simultaneously fixed through cross-currency and interest rate swap agreements into Euro ($150 million) and Swiss Franc ($150 million) rates carrying average effective interest rates of 0.94% and hedge our net investment in our Euro and Swiss Franc denominated net assets.

In addition, we designated our CHF 297 million senior notes as a hedge in our net investment in our Swiss Franc denominated net assets. Proceeds from this financing were used to repay the outstanding borrowings under our prior 2015 revolving credit facility and we intend to use the remaining proceeds for general corporate purposes and to support corporate strategic objectives. During December 2019, we entered into U.S. Dollar to Euro cross-currency swaps on our existing 2012 private placement notes of $105 million 4.31% Series 2012A Senior Notes, Tranche C, repaid in January 2022, and the existing $100 million of 4.46% Series 2012A Senior Notes, Tranche D, due January 18, 2024, resulting in an average effective interest rate of 2.25% on these instruments. The cross-currency swaps hedge our net investment in our Euro denominated net assets.

As of September 30, 2022, we have several cross-currency and interest rate swap agreements with a notional value of $148.5 million of U.S. to Swiss Franc and a notional value of $248.5 million of U.S. to Euro to hedge the variability in the movement of foreign currency exchange rates on portions of our Euro and Swiss Franc denominated net asset investments. As a result of entering into these agreements, the Company lowered net interest expense by $2.5 million and $1.4 million during the three months ended September 30, 2022 and 2021, respectively and by $5.2 million and $4.1 million during the nine months ended September 30, 2022 and 2021, respectively. We anticipate these swap agreements will lower net interest expense in future years.

On June 16, 2022, we entered into the First Amendment to the 2019 Credit Agreement to modify certain contract definitions within the agreement. Primarily, the current London Interbank Offered Rate ("LIBOR") rates were changed to new alternative base rates for the respective currencies. As part of the change any related items, such as fall back rates and day conventions were also changed. No other material terms were modified with this agreement. During 2022, we adopted the practical expedient for Reference Rate Reform related to its debt arrangements and as such, this amendment is treated as a continuation of the existing debt agreement and no gain or loss on the modification was recorded.

On September 30, 2022, we entered into the Second Amendment to the 2019 Term Loan Agreement and the Second Amendment to the 2019 Credit Agreement (collectively, the "Amendments"), to modify certain aspects of the 2019 Term Loan Agreement and 2019 Credit Agreement, respectively. The Amendments modify the reference rate thereunder from LIBOR to Secured Overnight Financing Rate ("SOFR"). There were no other changes to the 2019 Term Loan Agreement or 2019 Credit Agreement as a result of the Amendments. We did not record any gains or losses on the conversion of the reference rate for Borrowings under the Term Loan Agreement from LIBOR to SOFR.

We had the following debt outstanding (in millions):

	September 30, 2022	December 31, 2021
EUR notes (in U.S. dollars) under the 2021 Note Purchase Agreement	$ 146.8	$ 170.7
CHF notes (in U.S. dollars) under the 2021 Note Purchase Agreement	304.6	329.2
CHF notes (in U.S. dollars) under the 2019 Note Purchase Agreement	301.6	325.9
U.S. Dollar notes under the 2019 Term Loan Agreement	297.0	299.2
U.S. Dollar notes under the 2012 Note Purchase Agreement	100.0	205.0
Unamortized debt issuance costs	(1.7)	(2.0)
Other loans	1.9	1.9
Total notes and loans outstanding	1,150.2	1,329.9
Finance lease obligations	3.6	4.3
Total debt	1,153.8	1,334.2
Current portion of long-term debt	(17.0)	(112.4)
Total long-term debt, less current portion	$ 1,136.8	$ 1,221.8

As of September 30, 2022, we had no off-balance sheet arrangements.

The following is a summary of the maximum commitments and the net amounts available to us under the 2019 Credit Agreement and other lines of credit with various financial institutions located primarily in Germany and Switzerland that are unsecured and typically due upon demand with interest payable monthly, at September 30, 2022 (in millions):

	Weighted Average Interest Rate	Total Amount Committed by Lenders	Outstanding Borrowings	Outstanding Letters of Credit	Total Amount Available
2019 Credit Agreement	0.15%	$ 600.0	$ —	$ —	$ 600.0
Bank guarantees and working capital line	varies	101.3	—	101.3	—
Total revolving lines of credit		$ 701.3	$ —	$ 101.3	$ 600.0

As of September 30, 2022, we were compliant with the financial covenants of these debt agreements.

RECENT ACCOUNTING PRONOUNCEMENTS

Information regarding recent accounting standard changes and developments is incorporated by reference from Part I, Item 1, Unaudited Condensed Consolidated Financial Statements, of this document and should be considered an integral part of this Item 2. See Note 2 in the Notes to the Unaudited Condensed Consolidated Financial Statements in this Quarterly Report on Form 10-Q for recently adopted and issued accounting standards.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are potentially exposed to market risks associated with changes in foreign currency translation rates, interest rates and commodity prices. We selectively use financial instruments to reduce these risks. All transactions related to risk management techniques are authorized and executed pursuant to our policies and procedures. Analytical techniques used to manage and monitor foreign currency translation and interest rate risk include market valuations and sensitivity analysis.

Foreign Currency Risk

We generate a substantial portion of our revenues in international markets, principally Germany and other countries in the European Union, Switzerland and Japan, which exposes our operations to the risk of exchange rate fluctuations. The impact of currency exchange rate movement can be positive or negative in any period. Our costs related to sales in foreign currencies are largely denominated in the same respective currencies, reducing our transaction risk exposure. However, for foreign currency denominated sales in certain regions, such as Japan, where we do not incur significant costs denominated in Japanese Yen, we are more exposed to the impact of foreign currency fluctuations.

For sales not denominated in U.S. dollars, if there is an increase in the rate at which a foreign currency is exchanged for U.S. dollars, it will require more of the foreign currency to equal a specified amount of U.S. dollars than before the rate increase. In such cases, if we price our products in the foreign currency, we will receive less in U.S. dollars than we would have received before the rate increase went into effect. If we price our products in U.S. dollars and competitors price products in local currency, an increase in the relative strength of the U.S. dollar could result in our prices not being competitive in a market where business is transacted in the local currency. For example, if the U.S. dollar strengthened against the Japanese Yen, our Japanese-based competitors would have a greater pricing advantage over us.

Changes in foreign currency translation rates decreased our revenue by 9.0% and increased our revenue by 1.0% for the three months ended September 30, 2022 and 2021, respectively. Changes in foreign currency translation rates decreased our revenue by 6.9% and increased our revenue by 4.5% for the nine months ended September 30, 2022 and 2021, respectively.

Assets and liabilities of our foreign subsidiaries, where the functional currency is the local currency, are translated into U.S. dollars using period-end exchange rates. Revenues and expenses of foreign subsidiaries are translated at the average exchange rates in effect during the year. Adjustments resulting from financial statement translations are included as a separate component of shareholders' equity. For the three months ended September 30, 2022 and 2021, we recorded net gains (losses) from currency translation adjustments of $(88.3) million and $(26.6) million, respectively. For the nine months ended September 30, 2022 and 2021, we recorded net losses from foreign currency translation of $(195.7) million and $(80.2) million, respectively. Gains and losses resulting from foreign currency transactions are reported in interest and other income (expense), net in the unaudited condensed consolidated statements of income and comprehensive income.

We periodically enter into forward currency contracts in order to minimize the volatility that fluctuations in currency translation have on our monetary transactions. Under these arrangements, we typically agree to purchase a fixed amount of a foreign currency in exchange for a fixed amount of U.S. dollars or other currencies on specified dates with maturities of less than twelve months, with some agreements extending to longer periods. These transactions do not qualify for hedge accounting and, accordingly, the instrument is recorded at fair value with the corresponding gains and losses recorded in the unaudited condensed consolidated statements of income and comprehensive income.

As of September 30, 2022, we have several cross-currency and interest rate swap agreements with a notional value of $148.5 million of U.S. dollar to Swiss Franc and a notional value of $248.5 million of U.S. dollar to Euro to hedge the variability in the movement of foreign currency exchange rates on portions of our Euro and Swiss Franc denominated net asset investments. Under the GAAP hedge accounting guidance, changes in fair value of the derivative that relates to changes in the foreign currency spot rate are recorded in the currency translation adjustment in comprehensive income (loss) and remain in accumulated comprehensive income (loss) in shareholders' equity until the sale or substantial liquidation of the foreign operation. For the three months ended September 30, 2022 and 2021, we recorded net gains from the changes in fair value of the derivatives of $19.9 million and net gains of $8.4 million, respectively. For the nine months ended September 30, 2022 and 2021, we recorded net gains from the changes in fair value of the derivatives of $50.0 million and $37.2 million, respectively.

On December 7, 2021, we entered into a note purchase agreement, referred to as the 2021 Note Purchase Agreement, with a group of institutional accredited investors. Pursuant to the 2021 Note Purchase Agreement, we issued and sold CHF 300 million aggregate principal amount of 0.88% series A senior notes and EUR 150 million aggregate principal amount of 1.03% series B senior notes due December 8, 2031. We designated our CHF 300 million series A senior notes as a hedge in our net investment in our Swiss Franc denominated net assets. We designated our EUR 150 million series B senior notes as a hedge in our net investment in our Euro denominated net assets. Accordingly, the change in fair value of the 2021 Note Purchase Agreement is recorded in other comprehensive income within derivatives designated as hedging instruments, net of tax.

On December 11, 2019, we entered into a note purchase agreement, referred to as the 2019 Note Purchase Agreement, with a group of institutional accredited investors. Pursuant to the 2019 Note Purchase Agreement, we issued and sold CHF 297 million aggregate principal amount of 1.01% senior notes due December 11, 2029. We designated our CHF 297 million senior notes as a hedge in our net investment in our Swiss Franc denominated net assets. Accordingly, the change in fair value of the 2019 Note Purchase Agreement is recorded in other comprehensive income within derivatives designated as hedging instruments, net of tax.

For the three months ended September 30, 2022 and 2021, we recorded net gains (losses) from the changes in fair value, net of tax, of the 2021 Note Purchase Agreement and the 2019 Note Purchase Agreement of $23.0 million and $2.2 million, respectively. For the nine months ended September 30, 2022 and 2021, we recorded net gains (losses) from the change in fair value, net of tax, of the 2021 Note Purchase Agreement and the 2019 Note Purchase Agreement of $55.5 million and $22.2 million, respectively.

From time to time, we have entered into forward exchange contracts designed to minimize the volatility that fluctuations in foreign currency have on our cash flows related to purchases and sales denominated in foreign currencies. Under these arrangements, we agree to purchase a fixed amount of a foreign currency in exchange for a fixed amount of U.S. dollars or other currencies on specified dates typically with maturities of less than twelve months with some agreements extending to longer periods. These transactions are recorded at fair value with the corresponding gains and losses recorded in interest and other income (expense), net in the unaudited condensed consolidated statements of income and comprehensive income. At September 30, 2022 and December 31, 2021, we had foreign exchange contracts with notional amounts aggregating $131.5 million and $180.7 million, respectively. We will continue to evaluate our currency risks and, in the future, may utilize foreign currency contracts more frequently.

Interest Rate Risk

We regularly invest excess cash in short-term investments that are subject to changes in interest rates. We believe that the market risk arising from holding these financial instruments is minimal because of our policy of investing in short-term financial instruments issued by highly rated financial institutions.

Our exposure related to adverse movements in interest rates is derived primarily from outstanding floating rate debt instruments that are indexed to short-term market rates. We currently have a higher level of fixed rate debt than variable rate debt, which limits the exposure to adverse movements in interest rates.

Commodity Price Risk

We are exposed to certain commodity risks associated with prices for various raw materials. The prices of copper and certain other raw materials, particularly niobium-tin, used to manufacture superconductors, have increased significantly over the last decade. Copper and niobium-tin are the main components of low temperature superconductors and continued commodity price increases for copper and niobium, as well as other raw materials, may negatively affect our profitability. Periodically, we enter into commodity forward purchase contracts to minimize the volatility that fluctuations in the price of copper have on our sales of these products. At September 30, 2022 and December 31, 2021, we had fixed price commodity contracts with notional amounts aggregating $7.8 million and $5.5 million, respectively. The fair value of the fixed price commodity contracts at September 30, 2022 and December 31, 2021 was $(1.1) million and $0.4 million, respectively. As commodity contracts settle, gains (losses) as a result of changes in fair values are adjusted to the contracts with the customers through revenues. We will continue to evaluate our commodity risks and may utilize commodity forward purchase contracts more frequently in the future.

Inflation Risk

We are subject to inflationary cost pressures across global supply chain networks. Certain components, parts, or materials are experiencing significant cost pressures that have impacted or may impact our cost of operations in future periods. Further, inflation has increased our general and administrative expenses and may vary between countries in which we operate. We continue to evaluate these cost increases in relation to our new orders and may continue to see a negative impact on our financial results for a period of time.

ITEM 4. CONTROLS AND PROCEDURES

We have established disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (Exchange Act)) that are designed to ensure that material information relating to us, including our consolidated subsidiaries, is made known to our Chief Executive Officer (principal executive officer) and Chief Financial Officer (principal financial officer and principal accounting officer) by others within our organization. Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our disclosure controls and procedures as of September 30, 2022. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective as of September 30, 2022.

Management concluded that the unaudited condensed consolidated financial statements contained in this Quarterly Report on Form 10-Q fairly state, in all material respects, our financial condition, results of operations and cash flows for the periods presented in conformity with accounting principles generally accepted in the United States of America.

Changes in Internal Controls over Financial Reporting

There have been no changes in our internal control over financial reporting during the three months ended September 30, 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

We are involved in lawsuits, claims, and proceedings, including, but not limited to, patent, customer, labor and employment and commercial matters, which arise in the ordinary course of business. There are no such matters pending that we currently believe are reasonably likely to have a material impact on our business or to our condensed consolidated financial statements. No assurances can be given with respect to the extent or outcome of any investigation, litigation or dispute.

On September 25, 2019, in a complaint filed in the District Court of Düsseldorf, Germany, Carl Zeiss Microscopy GmbH, a subsidiary of Carl Zeiss AG (Zeiss), sued Luxendo GmbH (Luxendo), a subsidiary of Bruker Corporation, for infringement of a registered German utility model patent licensed to Zeiss pertaining to one specific Luxendo product category. Zeiss is seeking injunctive relief, an accounting indemnification for damages resulting from infringement, and other, related remedies. We are vigorously defending against this claim.

In addition, we are subject to regulation by national, state and local government agencies in the United States and other countries in which we operate. From time to time, we are the subject of governmental investigations often involving regulatory, marketing and other business practices. These governmental investigations may result in the commencement of civil and criminal proceedings, fines, penalties and administrative remedies which could have a material adverse effect on our financial position, results of operations and/or liquidity.

ITEM IA. RISK FACTORS

In addition to the other information set forth in this report, you should carefully consider the factors discussed in Part I, Item 1A. “Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2021, which could materially affect our business, financial condition or future results. The risks described in this report and in our Annual Report on Form 10-K are not the only risks we face. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially adversely affect our business, financial condition and/or operating results.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

The following table provides information about purchases made by or on behalf of the Company or any "affiliated purchaser," as defined in Rule 10b-18(a)(3) under the Exchange Act, during the quarter ended September 30, 2022 of shares of our common stock.

Period	Total Number of Shares Purchased (1)	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number (or Approximate Dollar Value) of Shares that May Yet Be Purchased Under the Plans or Program (2)
July 1 - July 31, 2022	164,755	$ 64.13	164,755	$ 204,704,349
August 1 - August 31, 2022	879,608	61.70	879,608	150,433,926
September 1 - September 30, 2022	148,535	51.02	148,535	142,856,393
	1,192,898	$ 60.70	1,192,898	$ 142,856,393

(1) The Company purchased shares of common stock in accordance with the 2021 Repurchase Program. The shares were purchased on the open market at prevailing prices.

(2) The 2021 Repurchase Program authorizes the purchases of the Company's common stock of up to $500.0 million from time to time over a two-year period, in amounts, at prices, and at such times as management deems appropriate, subject to market conditions, legal requirements and other considerations.

ITEM 6. EXHIBITS

Exhibit No.	Description
10.1*	Second Amendment to Credit Agreement dated December 11, 2019, by and among the Company and certain of its subsidiaries as borrowers, Deutsche Bank Securities Inc. and Wells Fargo Bank, National Association, as Co-Syndication Agents, Citizens Bank, N.A., Credit Suisse (Switzerland) Ltd., TD Bank, N.A. and U.S. Bank National Association, as Co-Documentation Agents, Bank of America, N.A., as Administrative Agent, Swing Line Lender and Issuing Bank, and the several banks or other financial institutions or entities from time to time party thereto as lenders
10.2*	Second Amendment to Term Loan Agreement dated December 11, 2019, by and among the Company and certain of its subsidiaries, and Bank of America, N.A. as Administrative Agent, TD Bank, N.A. and the other banks or other financial institutions or entities from time to time party thereto as lenders
31.1*	Certification by Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2*	Certification by Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1*	Certification by Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS*	Inline XBRL Instance Document
101.SCH*	Inline XBRL Taxonomy Extension Schema Document
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104*	The cover page from the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2022 has been formatted in Inline XBRL (included in Exhibit 101)

* Filed or furnished herewith.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: November 4, 2022		BRUKER CORPORATION
	By:	/s/ FRANK H. LAUKIEN, PH.D.
		Frank H. Laukien, Ph.D. *President, Chief Executive Officer and Chairman* *(Principal Executive Officer)*
Date: November 4, 2022	By:	/s/ GERALD N. HERMAN
		Gerald N. Herman *Executive Vice President and Chief Financial Officer* *(Principal Financial Officer and Principal Accounting Officer)*

SECOND AMENDMENT TO CREDIT AGREEMENT

This **SECOND AMENDMENT TO CREDIT AGREEMENT** (this "Amendment") dated as of September 30, 2022, by and among **BRUKER CORPORATION**, a Delaware corporation (the "Company"), the Subsidiaries (if any) of the Company party to the Credit Agreement as borrowers (each a "Designated Borrower" and, together with the Company, the "Borrowers" and, each a "Borrower"), the Subsidiaries of the Company party to the Credit Agreement as guarantors (each a "Subsidiary Guarantor" and, together with the Borrowers, the "Loan Parties"), the Lenders (as defined in the Credit Agreement referred to below), and **BANK OF AMERICA, N.A.**, as Administrative Agent (as defined in the Credit Agreement referred to below) for such Lenders.

PRELIMINARY STATEMENTS

(1) Reference is made to that certain Credit Agreement dated as of December 11, 2019 (as amended by that certain First Amendment to Credit Agreement dated as of June 16, 2022 and as further amended, restated, amended and restated, extended, supplemented or otherwise modified from time to time, the "Credit Agreement"; terms defined therein unless otherwise defined herein being used herein as therein defined) among the Borrowers, the Lenders party thereto from time to time and **BANK OF AMERICA, N.A.**, as Administrative Agent.

(2) The Borrower has requested that the Administrative Agent and the Lenders make certain modifications to the Credit Agreement as set forth below.

(3) The undersigned Lenders and the Administrative Agent are prepared to make such modifications to the Credit Agreement requested by the Borrower, subject to the conditions, and in reliance on the representations set forth herein.

NOW THEREFORE, in consideration of the foregoing premises and other good and valuable consideration, the parties hereto hereby agree as follows:

SECTION 1. Amendment to Credit Agreement.

a) Section 1.01 of the Credit Agreement (Defined Terms) is hereby amended by adding the following new defined terms in the appropriate alphabetical order:

" "Affected Financial Institution" means (a) any EEA Financial Institution or (b) any UK Financial Institution."

" "CME" means CME Group Benchmark Administration Limited."

" "Daily Simple SOFR" with respect to any applicable determination date means the SOFR published on such date on the FRBNY's website (or any successor source)."

" "Lender Recipient Parties" means, collectively, the Lenders, the Swing Line Lender and the Issuing Bank."

" "Non-SOFR Successor Rate" has the meaning assigned to such term in Section 2.14(d)."

" "Rescindable Amount" means any payment that the Administrative Agent makes for the account of the Lenders or the Issuing Bank hereunder as to which the Administrative Agent determines (which determination shall be conclusive absent manifest error) that any of the following applies: (1) the applicable Borrower has not in fact made such payment; (2) the Administrative Agent has made a payment in excess of the amount so paid by such Borrower (whether or not then owed); or (3) the Administrative Agent has for any reason otherwise erroneously made such payment."

" "Resolution Authority" means an EEA Resolution Authority or, with respect to any UK Financial Institution, a UK Resolution Authority."

" "SOFR Adjustment" means 0.10% (10.00 basis points) per annum."

" "SOFR Administrator" means the FRBNY, as the administrator of SOFR, or any successor administrator of SOFR designated by the FRBNY or other Person acting as the SOFR Administrator at such time that is satisfactory to the Administrative Agent."

" "SOFR Scheduled Unavailability Date" has the meaning assigned to such term in Section 2.14(c)(ii)."

" "SOFR Successor Rate" has the meaning assigned to such term in Section 2.14(c)(ii)."

" "Term SOFR Loan" means a Loan that bears interest at a rate based on clause (a) of the definition of Term SOFR."

" "Term SOFR Replacement Date" has the meaning assigned to such term in Section 2.14(c)(ii)."

" "Term SOFR Screen Rate" means the forward-looking SOFR term rate administered by CME (or any successor administrator satisfactory to the Administrative Agent) and published on the applicable Reuters screen page (or such other commercially available source providing such quotations as may be designated by the Administrative Agent from time to time)."

" "UK Financial Institution" means any BRRD Undertaking (as such term is defined under the PRA Rulebook (as amended from time to time) promulgated by the United Kingdom Prudential Regulation Authority) or any person subject to IFPRU 11.6 of the FCA Handbook (as amended from time to time) promulgated by the United Kingdom Financial Conduct Authority, which includes certain credit institutions and investment firms, and certain affiliates of such credit institutions or investment firms."

" "UK Resolution Authority" means the Bank of England or any other public administrative authority having responsibility for the resolution of any UK Financial Institution."

“ “U.S. Government Securities Business Day” means any Business Day, except any Business Day on which any of the Securities Industry and Financial Markets Association, the New York Stock Exchange or the FRBNY is not open for business because such day is a legal holiday under the federal laws of the United States or the laws of the State of New York, as applicable.”

b) Section 1.01 of the Credit Agreement (Defined Terms) is hereby amended by deleting the following defined terms in their entirety: “Eurocurrency”; “Eurocurrency Rate”; “First Amendment Effective Date”; “LIBOR”; “LIBOR Screen Rate”; “London Banking Day”; and “Relevant Governmental Body”.

c) Section 1.01 of the Credit Agreement (Defined Terms) is hereby amended by amending and restating the following defined terms in their entirety as follows:

“Applicable Authority” means (a) with respect to SOFR, the SOFR Administrator or any Governmental Authority having jurisdiction over the Administrative Agent or the SOFR Administrator with respect to its publication of SOFR, in each case acting in such capacity and (b) with respect to any Agreed Currency, the applicable administrator for the Relevant Rate for such Agreed Currency or any Governmental Authority having jurisdiction over the Administrative Agent or such administrator with respect to its publication of the applicable Relevant Rate, in each case acting in such capacity.

“ “Bail-In Legislation” means, (a) with respect to any EEA Member Country implementing Article 55 of Directive 2014/59/EU of the European Parliament and of the Council of the European Union, the implementing law, rule, regulation or requirement for such EEA Member Country from time to time which is described in the EU Bail-In Legislation Schedule, and (b) with respect to the United Kingdom, Part I of the United Kingdom Banking Act 2009 (as amended from time to time) and any other law, regulation or rule applicable in the United Kingdom relating to the resolution of unsound or failing banks, investment firms or other financial institutions or their affiliates (other than through liquidation, administration or other insolvency proceedings).”

“Conforming Changes” means, with respect to the use, administration of or any conventions associated with SOFR, SONIA, SARON, EURIBOR or TIBOR or any proposed Successor Rate for any Agreed Currency, as applicable, any conforming changes to the definitions of ”SOFR,” “Term SOFR,” ‘Daily Simple SOFR,” “SONIA,” “SARON,” “EURIBOR,” or “TIBOR,” “Alternate Base Rate,” or “Interest Period,” timing and frequency of determining rates and making payments of interest and other technical, administrative or operational matters (including, for the avoidance of doubt, the definitions of “Business Day” and “U.S. Government Securities Business Day”, timing of borrowing requests or prepayment, conversion or continuation notices and length of lookback periods) as may be appropriate, in the discretion of the Administrative Agent, to reflect the adoption and implementation of such applicable rate(s) and to permit the administration thereof by the Administrative Agent in a manner substantially consistent with market practice for such currency (or, if the Administrative Agent determines that adoption of any portion of such market practice is not administratively feasible or that no market practice for the administration of such rate for such currency exists, in such other manner of administration as the Administrative Agent determines is reasonably necessary in connection with the administration of this Agreement and any other Loan Document).

"Interest Period" means with respect to any Term SOFR Borrowing and Alternative Currency Term Rate Loan Borrowing, the period commencing on the date of such Borrowing and ending on the numerically corresponding day in the calendar month that is one, three or, solely in the case of an Alternative Currency Term Rate Loan, six months thereafter, as the applicable Borrower (or the Company on behalf of the applicable Borrower) may elect in its Borrowing Request or Interest Election Request; provided, that (i) if any Interest Period would end on a day other than a Business Day, such Interest Period shall be extended to the next succeeding Business Day unless such next succeeding Business Day would fall in the next calendar month, in which case such Interest Period shall end on the next preceding Business Day, (ii) any Interest Period pertaining to a Term SOFR Borrowing or an Alternative Currency Term Rate Loan Borrowing that commences on the last Business Day of a calendar month (or on a day for which there is no numerically corresponding day in the last calendar month of such Interest Period) shall end on the last Business Day of the last calendar month of such Interest Period and (iii) no Interest Period shall extend beyond the Maturity Date. For purposes hereof, the date of a Borrowing initially shall be the date on which such Borrowing is made and thereafter shall be the effective date of the most recent conversion or continuation of such Borrowing.

"SOFR" means the Secured Overnight Financing Rate administered by the SOFR Administrator.

"Term SOFR" means:

(a) for any Interest Period with respect to a Term SOFR Loan, the rate per annum equal to the Term SOFR Screen Rate two U.S. Government Securities Business Days prior to the commencement of such Interest Period with a term equivalent to such Interest Period; provided that if the rate is not published prior to 11:00 a.m. on such determination date then Term SOFR means the Term SOFR Screen Rate on the first U.S. Government Securities Business Day immediately prior thereto, in each case, *plus* the SOFR Adjustment for such Interest Period; and

(b) for any interest calculation with respect to an Alternate Base Rate Loan on any date, the rate per annum equal to the Term SOFR Screen Rate with a term of one month commencing that day plus the SOFR Adjustment;

provided that if the Term SOFR determined in accordance with either of the foregoing provisions (a) or (b) of this definition would otherwise be less than zero, the Term SOFR shall be deemed zero for purposes of this Agreement.

" "Write-Down and Conversion Powers" means, (a) with respect to any EEA Resolution Authority, the write-down and conversion powers of such EEA Resolution Authority from time to time under the Bail-In Legislation for the applicable EEA Member Country, which write-down and conversion powers are described in the EU Bail-In Legislation Schedule, and (b) with respect to the United Kingdom, any powers of the applicable Resolution

Authority under the Bail-In Legislation to cancel, reduce, modify or change the form of a liability of any UK Financial Institution or any contract or instrument under which that liability arises, to convert all or part of that liability into shares, securities or obligations of that person or any other person, to provide that any such contract or instrument is to have effect as if a right had been executed under it or to suspend any obligation in respect of that liability or any of the powers under that Bail-In Legislation that are related to or ancillary to any of those powers."

d) Section 1.01 of the Credit Agreement (Defined Terms) is hereby amended by amending the definition of "Business Day" to delete clause (a) in its entirety and to re-designate clauses (b), (c) and (d) as clauses (a), (b) and (c), respectively.

e) Section 1.01 of the Credit Agreement (Defined Terms) is hereby amended by amending the definition of "Scheduled Unavailability Date" to delete the reference to "Section 2.14(c)(ii)" and to replace it with a reference to "Section 2.14(d)(ii)".

f) Section 1.01 of the Credit Agreement (Defined Terms) is hereby amended by amending the definition of "Successor Rate" to delete the reference to "Section 2.14(c)" and to replace it with a reference to "Section 2.14(d)".

g) The following definitions in Section 1.01 of the Credit Agreement (Defined Terms) and the following sections of the Credit Agreement are hereby amended by, in each case, replacing the term or terms "Eurocurrency", "Eurocurrency Rate" and/or "the Eurocurrency Rate" with the term "Term SOFR" in each instance in which such term or terms appears: the definition of "Alternate Base Rate"; the definition of "Applicable Rate"; the definition of "Borrowing"; the definition of "Interest Payment Date"; the definition of "Relevant Rate"; the definition of "Revaluation Date"; the definition of "Type"; Section 1.02 (Classification of Loans and Borrowings); Section 2.02 (Loans and Borrowings); Section 2.03 (Requests for Borrowings); Section 2.04 (Determination of Dollar Amount); Section 2.08 (Interest Elections); Section 2.11 (Prepayment of Loans); Section 2.12 (Fees); Section 2.16 (Break Funding Payments); and Section 2.20 (Expansion Option).

h) Section 1.06 of the Credit Agreement (Exchange Rates; Currency Equivalents) is hereby amended by deleting the term "Eurocurrency" in each instance in which it appears and by amending and restating subsection (d) in its entirety as follows:

(d) The Administrative Agent does not warrant, nor accept responsibility, nor shall the Administrative Agent have any liability with respect to the administration, submission or any other matter related to any reference rate referred to herein or with respect to any rate (including, for the avoidance of doubt, the selection of such rate and any related spread or other adjustment) that is an alternative or replacement for or successor to any such rate (including, without limitation, any Successor Rate) (or any component of any of the foregoing) or the effect of any of the foregoing. The Administrative Agent and its affiliates or other related entities may engage in transactions or other activities that affect any reference rate referred to herein, or any alternative, successor or replacement rate (including, without limitation, any Successor Rate) (or any component of any of the foregoing) or any related spread or other adjustments thereto, in each case, in a manner adverse to the Borrower. The Administrative Agent may select information sources or services in its reasonable discretion to ascertain any reference rate referred to herein or any alternative, successor or replacement rate (including, without limitation, any Successor Rate) (or any component of any of the foregoing), in each case pursuant to the terms of this Agreement, and shall have no liability to the Borrower, any Lender or any other person or entity for damages of any kind, including direct or indirect, special, punitive, incidental or consequential damages, costs, losses or expenses (whether in tort, contract or otherwise and whether at law or in equity), for any error or other action or omission related to or affecting the selection, determination, or calculation of any rate (or component thereof) provided by any such information source or service.

i) Section 2.13 of the Credit Agreement (Interest) is hereby amended by replacing the terms "Eurocurrency" and "the Eurocurrency Rate" with the term "Term SOFR" in each instance in which such terms appear and by amending subsection (d) to add the phrase "or Alternative Currency Term Rate Loan, as applicable," before the phrase "prior to the end of the current Interest Period therefor".

j) Section 2.14 of the Credit Agreement (Illegality; Inability to Determine Rates) is hereby amended by amending and restating it in its entirety as follows:

(a) Illegality. If any Lender reasonably determines that any Law has made it unlawful, or that any Governmental Authority has asserted that it is unlawful, for any Lender or its applicable lending office to perform any of its obligations hereunder or make, maintain or fund or charge interest with respect to any Loan or Letter of Credit, as applicable, or to determine or charge interest rates based upon Term SOFR, Alternative Currency Daily Rate or Alternative Currency Term Rate, or any Governmental Authority has imposed material restrictions on the authority of such Lender to purchase or sell, or to take deposits of, Dollars or any Foreign Currency in the applicable interbank market, then, on written notice thereof by such Lender to the Company through the Administrative Agent, (i) any obligation of such Lender to issue, make, maintain, fund or charge interest with respect to any such Loan or Letter of Credit or to make or continue Term SOFR Loans, Alternative Currency Daily Rate Loans or Alternative Currency Term Rate Loans in the affected currency or currencies or, in the case of Term SOFR Loans in Dollars, to convert ABR Loans to Term SOFR Loans, shall, subject to clause (x) below, be suspended, (ii) if such notice asserts the illegality of such Lender making or maintaining ABR Loans the interest rate on which is determined by reference to the Term SOFR component of the Alternate Base Rate, the interest rate on which ABR Loans of such Lender shall, if necessary to avoid such illegality, be determined by the Administrative Agent without reference to the Term SOFR component of the Alternate Base Rate, in each case until such Lender notifies the Administrative Agent and the Company in writing that the circumstances giving rise to such determination no longer exist. Upon receipt of such notice, (x) the Borrowers shall, upon written demand from such Lender (with a copy to the Administrative Agent) and subject to clause (y), (1) prepay or, if applicable and such Loans are denominated in Dollars, convert all Term SOFR Loans of such Lender to ABR Loans (the interest rate on which ABR Loans of such Lender shall, if necessary to avoid such illegality, be determined by the Administrative Agent without reference to the Term SOFR component of the Alternate Base Rate), either on the last day of the Interest Period therefor, if such Lender may lawfully continue to maintain such Term SOFR Loans to such day, or immediately, if such Lender may not lawfully continue to maintain such Term SOFR Loans or (2) if such Loan is a Foreign Currency Loan, prepay such applicable Foreign Currency and reborrow the same in Dollars in an amount equal to the Dollar Amount of such Foreign Currency Loan and (y) if such notice asserts the illegality of such Lender determining or charging interest rates based upon the Term SOFR, Alternative Currency Daily Rate or Alternative Currency Term Rate, the Administrative Agent shall during the period of such suspension compute the Alternate Base Rate applicable to such Lender without reference to the Term SOFR component thereof until the Administrative Agent is advised in writing by such Lender that it is no longer illegal for such Lender to determine or charge interest rates based upon Term SOFR. Upon any such prepayment or conversion, the Borrowers shall also pay accrued interest on the amount so prepaid or converted.

(b) Inability to Determine Rates. If in connection with any request for a Term SOFR Loan or an Alternative Currency Loan or a conversion to or continuation thereof, (a) the Administrative Agent determines (which determination shall be conclusive absent manifest error) that (x) no Successor Rate for the Relevant Rate for the applicable currency has been determined in accordance with (A) Section 2.14(c) and the circumstances under Section 2.14(c)(i) or the SOFR Scheduled Unavailability Date has occurred with respect to Term SOFR or (B) Section 2.14(d) and the circumstances under Section 2.14(d)(i) or the Scheduled Unavailability Date has occurred with respect to such Relevant Rate (as applicable), or (y) adequate and reasonable means do not otherwise exist for determining the Relevant Rate for the applicable currency for any determination date(s) or requested Interest Period, as applicable, with respect to a proposed Term SOFR Loan, Alternative Currency Loan or ABR Loan, or (b) the Administrative Agent or the Required Lenders determine that for any reason that the Relevant Rate with respect to a proposed Loan denominated in any currency for any requested Interest Period or determination date(s) does not adequately and fairly reflect the cost to such Lenders of funding such Loan, the Administrative Agent will promptly so notify the Company and each Lender. Thereafter, (x) the obligation of the Lenders to make or maintain Loans in the affected currencies, as applicable, shall, subject to the immediately succeeding paragraph below, be suspended in each case to the extent of the affected Term SOFR Loan, Alternative Currency Loans or Interest Period or determination date(s), as applicable, in each case until (i) the Administrative Agent (or, in the case of a determination by the Required Lenders described in clause (b) of this Section, until the Administrative Agent upon instruction of the Required Lenders) revokes such notice or (ii) a Successor Rate is determined and (y) in the event of a determination described in the preceding sentence with respect to the Term SOFR component of the Alternate Base Rate, the utilization of the Term SOFR component in determining the Alternate Base Rate shall be suspended, in each case until the Administrative Agent (upon the instruction of the Required Lenders) revokes such notice.

Upon receipt of such notice, (A) the Company may revoke any pending request for a Borrowing of, or continuation of Term SOFR Loan or Alternative Currency Loans to the extent of the affected Term SOFR Loan, Alternative Currency Loans or Interest Period or determination date(s), as applicable or, failing that, will be deemed to have converted such request into a request for a Borrowing of ABR Loans denominated in Dollars in the Dollar Amount of the amount specified therein and (B) any outstanding affected Term SOFR Loans or Alternative Currency Loans, at the Company's election, shall either (1) be converted into a Borrowing of ABR Loans denominated in Dollars in the Dollar Amount of the amount of such outstanding Alternative Currency Loan immediately, in the case of an Alternative Currency Daily Rate Loan or, at the end of the applicable Interest Period, in the case of a Term SOFR Loan or an Alternative Currency Term Rate Loan or (2) be prepaid in full immediately, in the case of an Alternative Currency Daily Rate Loan, or at the end of the applicable Interest Period, in the case of a Term SOFR Loan or an Alternative Currency Term Rate Loan; provided that if no election is made by the Company (x) in the case of an Alternative Currency Daily Rate Loan, by the date that is three Business Days after receipt by the Company of such notice or (y) in the case of a Term SOFR Loan or an Alternative Currency Term Rate Loan, by the last day of the current Interest Period for the applicable Term SOFR Loan or Alternative Currency Term Rate Loan, the Company shall be deemed to have elected clause (1) above.

(c) Replacement of Term SOFR or SOFR Successor Rate. Notwithstanding anything to the contrary in this Agreement or any other Loan Documents, if the Administrative Agent determines (which determination shall be conclusive absent manifest error), or the Company or Required Lenders notify the Administrative Agent (with, in the case of the Required Lenders, a copy to the Company) that the Company or Required Lenders (as applicable) have determined, that:

(i) adequate and reasonable means do not exist for ascertaining one month or three month interest periods of Term SOFR, including, without limitation, because the Term SOFR Screen Rate is not available or published on a current basis and such circumstances are unlikely to be temporary; or

(ii) CME or any successor administrator of the Term SOFR Screen Rate or a Governmental Authority having jurisdiction over the Administrative Agent or such administrator with respect to its publication of Term SOFR, in each case acting in such capacity, has made a public statement identifying a specific date after which one month and three month interest periods of Term SOFR or the Term SOFR Screen Rate shall or will no longer be made available, or permitted to be used for determining the interest rate of U.S. Dollar denominated syndicated loans, or shall or will otherwise cease, provided that, at the time of such statement, there is no successor administrator that is satisfactory to the Administrative Agent, that will continue to provide such interest periods of Term SOFR after such specific date (the latest date on which one month and three month interest periods of Term SOFR or the Term SOFR Screen Rate are no longer available permanently or indefinitely, the "SOFR Scheduled Unavailability Date");

then, on a date and time promptly determined by the Administrative Agent (any such date, the "Term SOFR Replacement Date"), which date shall be at the end of an Interest Period or on the relevant interest payment date, as applicable, for interest calculated and, solely with respect to clause (ii) above, no later than the SOFR Scheduled Unavailability Date, Term SOFR will be replaced hereunder and under any Loan Document with Daily Simple SOFR plus the SOFR Adjustment for any payment period for interest calculated that can be determined by the Administrative Agent, in each case, without any amendment to, or further action or consent of any other party to, this Agreement or any other Loan Document (the "SOFR Successor Rate").

If the SOFR Successor Rate is Daily Simple SOFR plus the SOFR Adjustment, all interest payments will be payable on a monthly basis with respect to such Daily Simple SOFR Loans. Notwithstanding anything to the contrary herein, (i) if the Administrative Agent determines that Daily Simple SOFR is not available on or prior to the Term SOFR Replacement Date, or (ii) if the events or circumstances of the type described in Section 2.14(c)(i) or (ii) have occurred with respect to the SOFR Successor Rate then in effect, then in each case, the Administrative Agent and the Company may jointly amend this Agreement solely for the purpose of replacing Term SOFR or any then current SOFR Successor Rate in accordance with this Section 2.14(c) at the end of any Interest Period, relevant interest payment date or payment period for interest calculated, as applicable, with another alternative benchmark rate giving due consideration to any evolving or then existing convention for similar U.S. dollar denominated credit facilities syndicated and agented in the United States for such alternative benchmark and, in each case, including any mathematical or other adjustments to such benchmark giving due consideration to any evolving or then existing convention for similar U.S. dollar denominated credit facilities syndicated and agented in the United States for such benchmark, which adjustment or method for calculating such adjustment shall be published on an information service as selected by the Administrative Agent from time to time in its reasonable discretion and may be periodically updated. For the avoidance of doubt, any such proposed rate and adjustments, shall constitute a "SOFR Successor Rate". Any such amendment shall become effective at 5:00 p.m. on the fifth Business Day after the Administrative Agent and the Company shall have executed such amendment and shall have posted such proposed amendment to all Lenders unless, prior to such time, Lenders comprising the Required Lenders have delivered to the Administrative Agent written notice that such Required Lenders object to such amendment.

(d) Notwithstanding anything to the contrary in this Agreement or any other Loan Documents, if the Administrative Agent determines (which determination shall be conclusive absent manifest error), or the Company or Required Lenders notify the Administrative Agent (with, in the case of the Required Lenders, a copy to the Company) that the Company or Required Lenders (as applicable) have determined, that:

(i) adequate and reasonable means do not exist for ascertaining the Relevant Rate (other than Term SOFR) for an Agreed Currency (other than Dollars) because none of the tenors of such Relevant Rate (including any forward-looking term rate thereof) is available or published on a current basis and such circumstances are unlikely to be temporary; or

(ii) the Applicable Authority has made a public statement identifying a specific date after which all tenors of the Relevant Rate (other than Term SOFR) for an Agreed Currency (other than Dollars) (including any forward-looking term rate thereof) shall or will no longer be representative or made available, or used for determining the interest rate of loans denominated in such Agreed Currency, or shall or will otherwise cease, provided that, in each case, at the time of such statement, there is no successor administrator that is satisfactory to the Administrative Agent that will continue to provide such representative tenor(s) of the Relevant Rate (other than Term SOFR) for such Agreed Currency (other than Dollars) (the latest date on which all tenors of the Relevant Rate for such Agreed Currency (including any forward-looking term rate thereof) are no longer representative or available permanently or indefinitely, the "Scheduled Unavailability Date"); or

(iii) syndicated loans currently being executed and agented in the United States, are being executed or amended (as applicable) to incorporate or adopt a new benchmark interest rate to replace the Relevant Rate (other than Term SOFR) for an Agreed Currency (other than Dollars), or

or if the events or circumstances of the type described in 2.14(d)(i), (ii) or (iii) have occurred with respect to the Non-SOFR Successor Rate then in effect, then, the Administrative Agent and the Company may jointly amend this Agreement solely for the purpose of replacing the Relevant Rate for an Agreed Currency or any then current Non-SOFR Successor Rate for an Agreed Currency in accordance with this Section 2.14(d) with an alternative benchmark rate giving due consideration to any evolving or then existing convention for similar credit facilities syndicated and agented in the United States and denominated in such Agreed Currency for such alternative benchmark, and, in each case, including any mathematical or other adjustments to such benchmark giving due consideration to any evolving or then existing convention for similar credit facilities syndicated and agented in the United States and denominated in such Agreed Currency for such benchmarks, which adjustment or method for calculating such adjustment shall be published on an information service as selected by the Administrative Agent from time to time in its reasonable discretion and may be periodically updated (and any such proposed rate, including for the avoidance of doubt, any adjustment thereto, a "Non-SOFR Successor Rate," and collectively with the SOFR Successor Rate, each a "Successor Rate")), and any such amendment shall become effective at 5:00 p.m. on the fifth Business Day after the Administrative Agent and the Company shall have executed such amendment and shall have posted such proposed amendment to all Lenders unless, prior to such time, Lenders comprising the Required Lenders have delivered to the Administrative Agent written notice that such Required Lenders object to such amendment.

(e) Successor Rate. The Administrative Agent will promptly (in one or more notices) notify the Company and each Lender of the implementation of any Successor Rate.

Any Successor Rate shall be applied in a manner consistent with market practice; provided that to the extent such market practice is not administratively feasible for the Administrative Agent, such Successor Rate shall be applied in a manner as otherwise reasonably determined by the Administrative Agent.

Notwithstanding anything else herein or in the Credit Agreement, if at any time any Successor Rate as so determined would otherwise be less than zero%, the Successor Rate will be deemed to be zero% for the purposes of this Agreement and the other Loan Documents.

In connection with the implementation of a Successor Rate, the Administrative Agent will have the right to make Conforming Changes from time to time and, notwithstanding anything to the contrary herein or in any other Loan Document, any amendments implementing such Conforming Changes will become effective without any further action or consent of any other party to this Agreement; provided that, with respect to any such amendment effected, the Administrative Agent shall (i) promptly notify the Borrowers in writing of such Conforming Changes upon the effectiveness thereof and (ii) post each such amendment implementing such Conforming Changes to the Lenders reasonably promptly after such amendment becomes effective.

k) Section 2.15 of the Credit Agreement (Increased Costs) is hereby amended by (i) amending subsection (e) to replace the term "the Eurocurrency" with the term "Term SOFR", (ii) to replace the term "Alternative Currency Loan" with "Alternative Currency Loans", (iii) to delete the phrase "(i) as long as such Lender shall be required to maintain reserves with respect to liabilities or assets consisting of or including eurocurrency funds or deposits (currently known as "Eurocurrency liabilities") or other similar liabilities, additional interest on the unpaid principal amount of each Eurocurrency Loan or Alternative Currency Loan equal to the actual costs of such reserves allocated to such Loan by such Lender (as determined by such Lender in good faith, which determination shall be conclusive absent manifest error), and (ii)", (iv) to delete the word "other" before the phrase "central banking or financial regulatory authority" and (v) to replace the term "London" with the term "relevant" in the instance in which it appears.

l) Section 3.19 of the Credit Agreement is hereby amended by replacing the term "EEA" with the term "Affected" in each instance in which it appears (including in the section heading).

m) The Credit Agreement is hereby amended by adding the following text in its entirety as a new Section 8.14:

SECTION 8.14 Recovery of Erroneous Payments. Without limitation of any other provision in this Agreement, if at any time the Administrative Agent makes a payment hereunder in error to any Lender Recipient Party, whether or not in respect of an Obligation due and owing by any Borrower at such time, where such payment is a Rescindable Amount, then in any such event, each Lender Recipient Party receiving a Rescindable Amount severally agrees to repay to the Administrative Agent forthwith on demand the Rescindable Amount received by such Lender Recipient Party in Same Day Funds in the currency so received, with interest thereon, for each day from and including the date such Rescindable Amount is received by it to but excluding the date of payment to the Administrative Agent, at the greater of the Federal Funds Effective Rate and a rate determined by the Administrative Agent in accordance with banking industry rules on interbank compensation. Each Lender Recipient Party irrevocably waives any and all defenses, including any "discharge for value" (under which a creditor might otherwise claim a right to retain funds mistakenly paid by a third party in respect of a debt owed by another) or similar defense to its obligation to return any Rescindable Amount. The Administrative Agent shall inform each Lender Recipient Party promptly upon determining that any payment made to such Lender Recipient Party comprised, in whole or in part, a Rescindable Amount.

n) Section 9.18 of the Credit Agreement is hereby amended by (i) replacing the term “EEA Financial Institution” or “EEA Financial Institutions” with the term “Affected Financial Institution” or “Affected Financial Institutions”, as applicable, in each instance in which it appears (including in the section heading), (ii) replacing the phrase “write-down and conversion powers of an EEA” and the phrase “write-down and conversion powers of any EEA” with the phrase “Write-Down and Conversion Powers of the applicable” in each instance in which it appears and (iii) replacing the phrase “an EEA Resolution Authority” in subsection (a) with the phrase “the applicable Resolution Authority”.

o) Exhibit B-1 to the Credit Agreement (Borrowing Request), Exhibit B-2 to the Credit Agreement (Interest Election Request) and Exhibit J to the Credit Agreement (Notice of Loan Prepayment) are hereby amended by replacing the term “Eurocurrency” or “a Eurocurrency” with the term “Term SOFR” or “a Term SOFR”, as applicable, in each instance in which such term appears (other than the final instance in which such term appears in footnote 1, in which case such term shall be replaced with the term “Alternative Currency” or “an Alternative Currency”, as applicable) and by adding the phrase “, solely in the case of an Alternative Currency Term Rate Loan,” before the phrase “6 month interest period)” in each instance in which it appears.

SECTION 2. Representations and Warranties. Each Loan Party hereby represents and warrants that (a) the execution, delivery and performance by the Loan Parties of this Amendment and the consummation of the transactions contemplated hereby (i) are within such Person’s organizational powers and have been duly authorized by all necessary organizational action, (ii) will not violate any organizational document of such Person or any of its Subsidiaries, or, in any material respect, any law, treaty, rule or regulation, or determination of a Governmental Authority, in each case applicable to or binding upon such Person or any of its Subsidiaries or any of such Person’s property or to which such Person or any of its Subsidiaries or any of such Person’s property is subject, or any judgment, order or ruling of any Governmental Authority, and (iii) will not violate or result in a default under any material contract of any Loan Party or any of its Subsidiaries or any of its assets or give rise to a right thereunder to require any payment to be made by any Loan Party or any of its Subsidiaries, and (b) this Amendment has been duly executed and delivered by each Loan Party and constitutes the valid and binding obligation of each Loan Party, enforceable against it in accordance with its terms, except as may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or similar laws affecting the enforcement of creditors’ rights generally and by general principles of equity.

SECTION 3. Reference to and Effect on the Loan Documents. The parties hereto hereby agree that this Amendment shall constitute a “Loan Document” for all purposes of the Credit Agreement.

SECTION 4. Conditions Precedent. This Amendment shall become effective as of the date first set forth above upon the receipt by the Administrative Agent of counterparts to this Amendment duly executed by the Administrative Agent, each Lender and the Loan Parties.

SECTION 5. Delivery by Electronic Transmission. Delivery of an executed counterpart of a signature page to this Amendment in electronic format (including .pdf format) by electronic transmission shall be effective as delivery of an original executed counterpart of this Amendment.

SECTION 6. GOVERNING LAW. THIS AMENDMENT AND ANY CLAIMS, CONTROVERSY, DISPUTE OR CAUSE OF ACTION (WHETHER IN CONTRACT OR TORT OR OTHERWISE) BASED UPON, ARISING OUT OF OR RELATING TO THIS AMENDMENT AND THE TRANSACTIONS CONTEMPLATED HEREBY SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK.

SECTION 7. Expenses. The Borrower shall pay on demand all reasonable, documented out-of-pocket expenses in any way relating to the enforcement or protection of the Administrative Agent's rights under this Amendment, including any incurred during any "workout" or restructuring in respect of the Obligations and any incurred in the preservation, protection or enforcement of any rights of any Credit Party in any proceeding under any Debtor Relief Laws. The obligations of the Borrower under this provision shall survive the payment in full of the Obligations and termination of the Loan Documents.

SECTION 8. No Waiver. Nothing contained herein shall constitute a waiver of, impair or otherwise affect any of the Obligations, Guaranteed Obligations or any other obligation of any party hereto.

SECTION 9. Survival of Representations and Warranties. All representations and warranties made in this Amendment or any other Loan Document shall survive the execution and delivery of this Amendment, and no investigation by the Administrative Agent or the Lenders shall affect the representations and warranties or the right of the Administrative Agent and the Lenders to rely upon them.

[Remainder of page intentionally left blank; signature pages follow]

IN WITNESS WHEREOF, the parties have each caused this Amendment to be duly executed and delivered by its officer thereunto duly authorized as of the date first above written.

Borrower:

BRUKER CORPORATION

By: /s/ Gerald Herman
Name: Gerald Herman
Title: Executive Vice President and Chief Financial Officer

Designated Borrowers:

BRUKER FINANCE B.V.

By: /s/ Jason Faessler
Name: Jason Faessler
Title: Director

BRUKER INVEST AG

By: /s/ Patrick Buchi
Name: Patrick Buchi
Title: General Counsel

By: /s/ Flavia Denzler
Name: Flavia Denzler
Title: Authorized Signatory

BANK OF AMERICA, N.A. as Administrative Agent

By: /s/ Felicia Brinson
Name: Felicia Brinson
Title: Assistant Vice President

BANK OF AMERICA, N.A., as Lender

By: /s/ Irina Froment
Name: Irina Froment
Title: Senior Vice President

WELLS FARGO BANK, NATIONAL ASSOCIATION, individually as a Lender

By: /s/ Yinghua Zhang
Name: Yinghua Zhang
Title: Senior Vice President

DEUTSCHE BANK AG NEW YORK BRANCH, individually as a Lender

By: /s/ Ming K. Chu
Name: Ming K. Chu
Title: Director

By: /s/ Annie Chung
Name: Annie Chung
Title: Director

CITIZENS BANK, N.A., individually as a Lender

By: /s/ William Rowe
Name: William Rowe
Title: Managing Director

TD BANK, N.A., individually as a Lender

By: /s/ Steve Levi
Name: Steve Levi
Title: Senior Vice President

CREDIT SUISSE (SWITZERLAND) LTD., individually as a Lender

By:/s/ Daniel Brandli
Name: Daniel Brandli
Title: Assistant Vice President

By: /s/ Stefan Willi
Name: Stefan Willi
Title: Director

M&T BANK, successor by merger to People's United Bank, N.A., individually as a Lender

By: /s/ Darci Buchanan
Name: Darci Buchanan
Title: Senior Vice President

U.S. BANK NATIONAL ASSOCIATION, as a Bank

By: /s/ Michael West
Name: Michael West
Title: Senior Vice President

SECOND AMENDMENT TO TERM LOAN AGREEMENT

This **SECOND AMENDMENT TO TERM LOAN AGREEMENT** (this "Amendment") dated as of September 30, 2022, by and among **BRUKER CORPORATION**, a Delaware corporation (the "Company"), the Subsidiaries (if any) of the Company party to the Term Loan Agreement as borrowers (each a "Designated Borrower" and, together with the Company, the "Borrowers" and, each a "Borrower"), the Subsidiaries of the Company party to the Term Loan Agreement as guarantors (each a "Subsidiary Guarantor" and, together with the Borrowers, the "Loan Parties"), the Lenders (as defined in the Term Loan Agreement referred to below), and **BANK OF AMERICA, N.A.**, as Administrative Agent (as defined in the Term Loan Agreement referred to below) for such Lenders.

PRELIMINARY STATEMENTS

(1) Reference is made to that certain Term Loan Agreement dated as of December 11, 2019 (as amended by that certain First Amendment to Term Loan Agreement, dated as of May 12, 2021, and as further amended, restated, amended and restated, extended, supplemented or otherwise modified from time to time, the "Term Loan Agreement"; terms defined therein unless otherwise defined herein being used herein as therein defined) among the Borrowers, the Lenders party thereto from time to time and **BANK OF AMERICA, N.A.**, as Administrative Agent.

(2) The Borrower has requested that the Administrative Agent and the Lenders make certain modifications to the Term Loan Agreement as set forth below.

(3) The undersigned Lenders and the Administrative Agent are prepared to make such modifications to the Term Loan Agreement requested by the Borrower, subject to the conditions, and in reliance on the representations set forth herein.

NOW THEREFORE, in consideration of the foregoing premises and other good and valuable consideration, the parties hereto hereby agree as follows:

SECTION 1. Amendment to Term Loan Agreement.

a) Section 1.01 of the Term Loan Agreement (Defined Terms) is hereby amended by adding the following new defined terms in the appropriate alphabetical order:

" "Affected Financial Institution" means (a) any EEA Financial Institution or (b) any UK Financial Institution."

" "Rescindable Amount" means any payment that the Administrative Agent makes for the account of the Lenders hereunder as to which the Administrative Agent determines (which determination shall be conclusive absent manifest error) that any of the following applies: (1) the applicable Borrower has not in fact made such payment; (2) the Administrative Agent has made a payment in excess of the amount so paid by such Borrower (whether or not then owed); or (3) the Administrative Agent has for any reason otherwise erroneously made such payment."

“ “Resolution Authority” means an EEA Resolution Authority or, with respect to any UK Financial Institution, a UK Resolution Authority.”

“ “Second Amendment Rate Effective Date” means December 12, 2022.”

“ “UK Financial Institution” means any BRRD Undertaking (as such term is defined under the PRA Rulebook (as amended form time to time) promulgated by the United Kingdom Prudential Regulation Authority) or any person subject to IFPRU 11.6 of the FCA Handbook (as amended from time to time) promulgated by the United Kingdom Financial Conduct Authority, which includes certain credit institutions and investment firms, and certain affiliates of such credit institutions or investment firms.”

“ “UK Resolution Authority” means the Bank of England or any other public administrative authority having responsibility for the resolution of any UK Financial Institution.”

b) Section 1.01 of the Term Loan Agreement (Defined Terms) is hereby amended by amending and restating the following defined terms in their entirety as follows:

“Bail-In Legislation” means, (a) with respect to any EEA Member Country implementing Article 55 of Directive 2014/59/EU of the European Parliament and of the Council of the European Union, the implementing law, rule, regulation or requirement for such EEA Member Country from time to time which is described in the EU Bail-In Legislation Schedule, and (b) with respect to the United Kingdom, Part I of the United Kingdom Banking Act 2009 (as amended from time to time) and any other law, regulation or rule applicable in the United Kingdom relating to the resolution of unsound or failing banks, investment firms or other financial institutions or their affiliates (other than through liquidation, administration or other insolvency proceedings).

“Interest Period” means with respect to any Eurocurrency Borrowing, the period commencing on the date of such Borrowing and ending on the numerically corresponding day in the calendar month that is one, two, three or six months thereafter, as the applicable Borrower (or the Company on behalf of the applicable Borrower) may elect in its Borrowing Request or Interest Election Request; provided, that (i) if any Interest Period would end on a day other than a Business Day, such Interest Period shall be extended to the next succeeding Business Day unless such next succeeding Business Day would fall in the next calendar month, in which case such Interest Period shall end on the immediately preceding Business Day, (ii) any Interest Period pertaining to a Eurocurrency Borrowing that commences on the last Business Day of a calendar month (or on a day for which there is no numerically corresponding day in the last calendar month of such Interest Period) shall end on the last Business Day of the last calendar month of such Interest Period, (iii) no Interest Period pertaining to a Eurocurrency Borrowing shall extend beyond the Second Amendment Rate Effective Date and (iv) no Interest Period shall extend beyond the Maturity Date. For purposes hereof, the date of a Borrowing initially shall be the date on which such Borrowing is made and thereafter shall be the effective date of the most recent conversion or continuation of such Borrowing.

" "Write-Down and Conversion Powers" means, (a) with respect to any EEA Resolution Authority, the write-down and conversion powers of such EEA Resolution Authority from time to time under the Bail-In Legislation for the applicable EEA Member Country, which write-down and conversion powers are described in the EU Bail-In Legislation Schedule, and (b) with respect to the United Kingdom, any powers of the applicable Resolution Authority under the Bail-In Legislation to cancel, reduce, modify or change the form of a liability of any UK Financial Institution or any contract or instrument under which that liability arises, to convert all or part of that liability into shares, securities or obligations of that person or any other person, to provide that any such contract or instrument is to have effect as if a right had been exercised under it or to suspend any obligation in respect of that liability or any of the powers under that Bail-In Legislation that are related to or ancillary to any of those powers."

c) Effective as of the Second Amendment Rate Effective Date, Section 1.01 of the Term Loan Agreement (Defined Terms) is hereby amended by adding the following new defined terms in the appropriate alphabetical order:

" "CME" means CME Group Benchmark Administration Limited."

" "Daily Simple SOFR" with respect to any applicable determination date means the SOFR published on such date on the FRBNY's website (or any successor source)."

" "SOFR Adjustment" means 0.10% (10.00 basis points) per annum."

" "SOFR Administrator" means the FRBNY, as the administrator of SOFR, or any successor administrator of SOFR designated by the FRBNY or other Person acting as the SOFR Administrator at such time that is satisfactory to the Administrative Agent."

" "SOFR Scheduled Unavailability Date" has the meaning assigned to such term in Section 2.14(c)(ii)."

" "SOFR Successor Rate" has the meaning assigned to such term in Section 2.14(c)(ii)."

" "SOFR Successor Rate Conforming Changes" means, with respect to the use, administration of or any conventions associated with SOFR or any proposed SOFR Successor Rate, any conforming changes to the definition of "SOFR," "Term SOFR," "Daily Simple SOFR," "Alternate Base Rate," or "Interest Period," timing and frequency of determining rates and making payments of interest and other technical, administrative or operational matters (including, for the avoidance of doubt, the definitions of "Business Day" and "U.S. Government Securities Business Day", timing of borrowing requests or prepayment, conversion or continuation notices and length of lookback periods) as may be appropriate, in the discretion of the Administrative Agent, to reflect the adoption and implementation of such SOFR Successor Rate and to permit the administration thereof by the Administrative Agent in a manner substantially consistent with market practice (or, if the Administrative Agent determines that adoption of any portion of such market practice is not administratively feasible or that no market practice for the administration of such SOFR Successor Rate exists, in such other manner of administration as the Administrative

Agent determines is reasonably necessary in connection with the administration of this Agreement and any other Loan Document).”

“ “Term SOFR Loan” means a Loan that bears interest at a rate based on clause (a) of the definition of Term SOFR.”

“ “Term SOFR Replacement Date” has the meaning assigned to such term in Section 2.14(c)(ii).”

“ “Term SOFR Screen Rate” means the forward-looking SOFR term rate administered by CME (or any successor administrator satisfactory to the Administrative Agent) and published on the applicable Reuters screen page (or such other commercially available source providing such quotations as may be designated by the Administrative Agent from time to time).”

“ “U.S. Government Securities Business Day” means any Business Day, except any Business Day on which any of the Securities Industry and Financial Markets Association, the New York Stock Exchange or the FRBNY is not open for business because such day is a legal holiday under the federal laws of the United States or the laws of the State of New York, as applicable.”

d) Effective as of the Second Amendment Rate Effective Date, Section 1.01 of the Term Loan Agreement (Defined Terms) is hereby amended by deleting the following defined terms in their entirety: “Eurocurrency”; “Eurocurrency Rate”; “LIBOR”; “LIBOR Screen Rate”; “LIBOR Successor Rate”; “LIBOR Successor Rate Conforming Changes”; “London Banking Day”; “Relevant Governmental Body”; “Scheduled Unavailability Date”; and “SOFR-Based Rate”.

e) Effective as of the Second Amendment Rate Effective Date, Section 1.01 of the Term Loan Agreement (Defined Terms) is hereby amended by amending and restating the following defined terms in their entirety as follows:

“Interest Period” means with respect to any Term SOFR Borrowing, the period commencing on the date of such Borrowing and ending on the numerically corresponding day in the calendar month that is three months thereafter; provided, that (i) if any Interest Period would end on a day other than a Business Day, such Interest Period shall be extended to the next succeeding Business Day unless such next succeeding Business Day would fall in the next calendar month, in which case such Interest Period shall end on the immediately preceding Business Day, (ii) any Interest Period pertaining to any Term SOFR Borrowing that commences on the last Business Day of a calendar month (or on a day for which there is no numerically corresponding day in the last calendar month of such Interest Period) shall end on the last Business Day of the last calendar month of such Interest Period and (iii) no Interest Period shall extend beyond the Maturity Date. For purposes hereof, the date of a Borrowing initially shall be the date on which such Borrowing is made and thereafter shall be the effective date of the most recent conversion or continuation of such Borrowing.

“SOFR” means the Secured Overnight Financing Rate administered by the SOFR Administrator.

"Term SOFR" means:

(a) for any Interest Period with respect to a Term SOFR Loan, the rate per annum equal to the Term SOFR Screen Rate two U.S. Government Securities Business Days prior to the commencement of such Interest Period with a term equivalent to such Interest Period; provided that if the rate is not published prior to 11:00 a.m. on such determination date then Term SOFR means the Term SOFR Screen Rate on the first U.S. Government Securities Business Day immediately prior thereto, in each case, *plus* the SOFR Adjustment for such Interest Period; and

(b) for any interest calculation with respect to an Alternate Base Rate Loan on any date, the rate per annum equal to the Term SOFR Screen Rate with a term of one month commencing that day plus the SOFR Adjustment;

provided that if the Term SOFR determined in accordance with either of the foregoing provisions (a) or (b) of this definition would otherwise be less than zero, the Term SOFR shall be deemed zero for purposes of this Agreement.

f) Effective as of the Second Amendment Rate Effective Date, Section 1.01 of the Term Loan Agreement (Defined Terms) is hereby amended by amending the definition of "Business Day" to delete the phrase "and, if such day relates to any interest rate settings as to a Eurocurrency Loan, means any such day that is also a London Banking Day".

g) Effective as of the Second Amendment Rate Effective Date, Section 1.01 of the Term Loan Agreement (Defined Terms) is hereby amended by amending the definition of "Interest Payment Date" to replace the term "Eurocurrency" with the term "Term SOFR" in the first instance in which it appears and to delete the phrase "and, in the case of a Eurocurrency Borrowing with an Interest Period of more than three months' duration, each day prior to the last day of such Interest Period that occurs at intervals of three months' duration after the first day of such Interest Period and the Maturity Date".

h) Effective as of the Second Amendment Rate Effective Date, the following definitions in Section 1.01 of the Term Loan Agreement (Defined Terms) and the following sections of the Term Loan Agreement are hereby amended by, in each case, replacing the term or terms "Eurocurrency", "Eurocurrency Rate" and/or "the Eurocurrency Rate" with the term "Term SOFR" in each instance in which such term or terms appears: the definition of "Alternate Base Rate"; the definition of "Applicable Rate"; the definition of "Borrowing"; the definition of "Type"; Section 1.02 (Classification of Loans and Borrowings); Section 2.01 (Commitments); Section 2.02 (Loans and Borrowings); Section 2.10 (Repayment of Loans; Evidence of Debt); Section 2.11 (Prepayment of Loans); and Section 2.13 (Interest).

i) Effective as of the Second Amendment Rate Effective Date, Section 1.06 of the Term Loan Agreement (Eurocurrency Rate) is hereby amended by amending and restating it in its entirety as follows:

SECTION 1.06 Rates. The Administrative Agent does not warrant, nor accept responsibility, nor shall the Administrative Agent have any liability with respect to the administration, submission or any other matter related to any reference rate referred to herein or with respect to any rate (including, for the avoidance of doubt, the selection of such rate and any related spread or other adjustment) that is an alternative or replacement for or successor to any such rate (including, without limitation, any SOFR Successor Rate) (or any component of any of the foregoing) or the effect of any of the foregoing. The Administrative Agent and its affiliates or other related entities may engage in transactions or other activities that affect any reference rate referred to herein, or any alternative, successor or replacement rate (including, without limitation, any SOFR Successor Rate) (or any component of any of the foregoing) or any related spread or other adjustments thereto, in each case, in a manner adverse to the Borrower. The Administrative Agent may select information sources or services in its reasonable discretion to ascertain any reference rate referred to herein or any alternative, successor or replacement rate (including, without limitation, any SOFR Successor Rate) (or any component of any of the foregoing), in each case pursuant to the terms of this Agreement, and shall have no liability to the Borrower, any Lender or any other person or entity for damages of any kind, including direct or indirect, special, punitive, incidental or consequential damages, costs, losses or expenses (whether in tort, contract or otherwise and whether at law or in equity), for any error or other action or omission related to or affecting the selection, determination, or calculation of any rate (or component thereof) provided by any such information source or service.

j) Effective as of the Second Amendment Rate Effective Date, Section 2.03 of the Term Loan Agreement (Requests for Borrowings) is hereby amended by (i) replacing the term “Eurocurrency” with the term “Term SOFR” in each instance in which it appears, (ii) deleting the phrase in subsection (v) “in the case of a Eurocurrency Borrowing, the initial Interest Period to be applicable thereto, which shall be a period contemplated by the definition of the term “Interest Period”” and replacing it with “[reserved]” and (iii) deleting the sentence “If no Interest Period is specified with respect to any requested Eurocurrency Borrowing, then the relevant Borrower shall be deemed to have selected an Interest Period of one month’s duration.”

k) Effective as of the Second Amendment Rate Effective Date, Section 2.08 of the Term Loan Agreement (Interest Elections) is hereby amended by (i) replacing the term “Eurocurrency” with the term “Term SOFR” in each instance in which it appears, (ii) deleting the phrase in subsection (iv) “if the resulting Borrowing is a Eurocurrency Borrowing, the Interest Period to be applicable thereto after giving effect to such election, which Interest Period shall be a period contemplated by the definition of the term “Interest Period”” and replacing it with “[reserved]” and (iii) deleting the sentence “If any such Interest Election Request requests a Eurocurrency Borrowing but does not specify an Interest Period, then the applicable Borrower shall be deemed to have selected an Interest Period of one month’s duration.”

l) Effective as of the Second Amendment Rate Effective Date, Section 2.14 of the Term Loan Agreement (Illegality; Inability to Determine Rates) is hereby amended by amending and restating it in its entirety as follows:

(a) Illegality. If any Lender reasonably determines that any Law has made it unlawful, or that any Governmental Authority has asserted that it is unlawful, for any Lender or its applicable lending office to perform any of its obligations hereunder or make, maintain or fund or charge interest with respect to any Loan, or to determine or charge interest rates based upon Term SOFR, or any Governmental Authority has imposed material restrictions on the authority of such Lender to purchase or sell, or to take deposits of, Dollars in the applicable interbank market, then, on written notice thereof by such Lender to the Company through the Administrative Agent, (i) any obligation of such Lender to issue, make, maintain, fund or charge interest with respect to any such Loan or to make or continue Term SOFR Loans or to convert ABR Loans to Term SOFR Loans, shall be suspended, and (ii) if such notice asserts the illegality of such Lender making or maintaining ABR Loans the interest rate on which is determined by reference to the Term SOFR component of the Alternate Base Rate, the interest rate on which ABR Loans of such Lender shall, if necessary to avoid such illegality, be determined by the Administrative Agent without reference to the Term SOFR component of the Alternate Base Rate, in each case until such Lender notifies the Administrative Agent and the Company in writing that the circumstances giving rise to such determination no longer exist. Upon receipt of such notice, (x) the Borrowers shall, upon written demand from such Lender (with a copy to the Administrative Agent), prepay or, if applicable, convert all Term SOFR Loans of such Lender to ABR Loans (the interest rate on which ABR Loans of such Lender shall, if necessary to avoid such illegality, be determined by the Administrative Agent without reference to the Term SOFR component of the Alternate Base Rate), either on the last day of the Interest Period therefor, if such Lender may lawfully continue to maintain such Term SOFR Loans to such day, or immediately, if such Lender may not lawfully continue to maintain such Term SOFR Loans and (y) if such notice asserts the illegality of such Lender determining or charging interest rates based upon Term SOFR, the Administrative Agent shall during the period of such suspension compute the Alternate Base Rate applicable to such Lender without reference to the Term SOFR component thereof until the Administrative Agent is advised in writing by such Lender that it is no longer illegal for such Lender to determine or charge interest rates based upon Term SOFR. Upon any such prepayment or conversion, the Borrowers shall also pay accrued interest on the amount so prepaid or converted.

(b) Inability to Determine Rates. If in connection with any request for a Term SOFR Loan or a conversion of ABR Loans to Term SOFR Loans or a continuation of any such Loans, as applicable, (i) the Administrative Agent determines (which determination shall be conclusive absent manifest error) that (A) no SOFR Successor Rate has been determined in accordance with Section 2.14(c), and the circumstances under clause (i) of Section 2.14(c) or the SOFR Scheduled Unavailability Date has occurred, or (B) adequate and reasonable means do not otherwise exist for determining Term SOFR for any requested Interest Period with respect to a proposed Term SOFR Loan or in connection with an existing or proposed ABR Loan, or (ii) the Administrative Agent or the Required Lenders determine that for any reason Term SOFR for any requested Interest Period with respect to a proposed Loan does not adequately and fairly reflect the cost to such Lenders of funding such Loan, the Administrative Agent will promptly so notify the Company and each Lender in writing. Thereafter, (x) the obligation of the Lenders to make or maintain Term SOFR Loans, or to convert ABR Loans to Term SOFR Loans, shall be suspended (to the extent of the affected Term SOFR Loans or Interest Periods), and (y) in the event of a determination described in the preceding sentence with respect to the Term SOFR component of the Alternate Base Rate, the utilization of the Term SOFR component in determining the Alternate Base Rate shall be suspended, in each case of clause (x) and clause (y), until the Administrative Agent (or, in the case of a determination by the Required Lenders described in clause (ii) of this Section 2.14(b), upon the instruction of the Required Lenders) revokes such notice. Upon receipt of such written notice, (i) the Company may revoke any pending request for a Borrowing of, conversion to or continuation of Term SOFR Loans (to the extent of the affected Term SOFR Loans or Interest Periods) or, failing that, will be deemed to have converted such request into a request for a Borrowing of ABR Loans in the amount specified therein and (ii) any outstanding Term SOFR Loans that have not been prepaid shall be deemed to have been converted to ABR Loans immediately at the end of their respective applicable Interest Period.

(c) Replacement of Term SOFR or SOFR Successor Rate. Notwithstanding anything to the contrary in this Agreement or any other Loan Documents, if the Administrative Agent determines (which determination shall be conclusive absent manifest error) or the Company or Required Lenders notify the Administrative Agent (with, in the case of the Required Lenders, a copy to the Company) that the Company or Required Lenders (as applicable) have determined, that:

(i) adequate and reasonable means do not exist for ascertaining the three month Interest Period of Term SOFR, including, without limitation, because the Term SOFR Screen Rate is not available or published on a current basis and such circumstances are unlikely to be temporary; or

(ii) CME or any successor administrator of the Term SOFR Screen Rate or a Governmental Authority having jurisdiction over the Administrative Agent or such administrator with respect to its publication of Term SOFR, in each case acting in such capacity, has made a public statement identifying a specific date after which the three month Interest Period of Term SOFR or the Term SOFR Screen Rate shall or will no longer be made available, or permitted to be used for determining the interest rate of U.S. Dollar denominated syndicated loans, or shall or will otherwise cease, provided that, at the time of such statement, there is no successor administrator that is reasonably satisfactory to the Administrative Agent that will continue to provide such Interest Period of Term SOFR after such specific date (the latest date on which the three month Interest Period of Term SOFR or the Term SOFR Screen Rate are no longer available permanently or indefinitely, the "SOFR Scheduled Unavailability Date");

then, on a date and time promptly determined by the Administrative Agent (any such date, the "Term SOFR Replacement Date"), which date shall be at the end of an Interest Period or on the relevant Interest Payment Date, as applicable, for interest calculated and, solely with respect to clause (ii) above, no later than the SOFR Scheduled Unavailability Date, Term SOFR will be replaced hereunder and under any Loan Document with Daily Simple SOFR plus the SOFR Adjustment for any payment period for interest calculated that can be determined by the Administrative Agent, in each case, without any amendment to, or further action or consent of any other party to, this Agreement or any other Loan Document (the "SOFR Successor Rate").

If the SOFR Successor Rate is Daily Simple SOFR plus the SOFR Adjustment, all interest payments will be payable on a monthly basis with respect to such Daily Simple SOFR Loans. Notwithstanding anything to the contrary herein, (i) if the Administrative Agent determines that Daily Simple SOFR is not available on or prior to the Term SOFR Replacement Date, or (ii) if the events or circumstances of the type described in Section 2.14(c)(i) or (ii) have occurred with respect to the SOFR Successor Rate then in effect, then in each case, the Administrative Agent and the Company may jointly amend this Agreement solely for the purpose of replacing Term SOFR or any then current SOFR Successor Rate in accordance with this Section 2.14(c) at the end of any Interest Period, relevant Interest Payment Date or payment period for interest calculated, as applicable, with an alternative benchmark rate giving due consideration to any evolving or then existing convention for similar Dollar denominated credit facilities syndicated and agented in the United States for such alternative benchmark and, in each case, including any mathematical or other adjustments to such benchmark giving due consideration to any evolving or then existing convention for similar Dollar denominated credit facilities syndicated and agented in the United States for such benchmark, which adjustment or method for calculating such adjustment shall be published on an information service as selected by the Administrative Agent from time to time in its reasonable discretion and may be periodically updated. For the avoidance of doubt, any such proposed rate, and adjustments, shall constitute a "SOFR Successor Rate". Any such amendment shall become effective at 5:00 p.m. on the fifth Business Day after the Administrative Agent and the Company shall have executed such amendment and shall have posted such proposed amendment to all Lenders unless, prior to such time, Lenders comprising the Required Lenders have delivered to the Administrative Agent written notice that such Required Lenders object to such amendment.

(d) SOFR Successor Rate. The Administrative Agent will promptly (in one or more notices) notify the Company and each Lender of the implementation of any SOFR Successor Rate.

Any SOFR Successor Rate shall be applied in a manner consistent with market practice; provided that to the extent such market practice is not administratively feasible for the Administrative Agent, such SOFR Successor Rate shall be applied in a manner as otherwise reasonably determined by the Administrative Agent.

Notwithstanding anything else herein, if at any time the SOFR Successor Rate as so determined would otherwise be less than zero, the SOFR Successor Rate will be deemed to be zero for purposes of this Agreement and the other Loan Documents.

In connection with the implementation of a SOFR Successor Rate, the Administrative Agent will have the right to make SOFR Successor Rate Conforming Changes from time to time and, notwithstanding anything to the contrary herein or in any other Loan Document, any amendments implementing such SOFR Successor Rate Conforming Changes will become effective without any further action or consent of any other party to this Agreement; provided that, with respect to any such amendment effected, the Administrative Agent shall (i) promptly notify the Borrowers in writing of such SOFR Successor Rate Conforming Changes upon the effectiveness thereof and (ii) post each such amendment implementing such SOFR Successor Rate Conforming Changes to the Lenders reasonably promptly after such amendment becomes effective.

For purposes of this Section 2.14(d), those Lenders that either have not made, or do not have an obligation under this Agreement to make, the relevant Loans shall be excluded from any determination of Required Lenders.

m) Effective as of the Second Amendment Rate Effective Date, Section 2.15 of the Term Loan Agreement (Increased Costs) is hereby amended by (i) deleting the phrase in subsection (e) "(i) as long as such Lender shall be required to maintain reserves with respect to liabilities or assets consisting of or including Eurocurrency funds or deposits (currently known as "Eurocurrency liabilities"), additional interest on the unpaid principal amount of each Eurocurrency Loan equal to the actual costs of such reserves allocated to such Loan by such Lender (as determined by such Lender in good faith, which determination shall be conclusive absent manifest error), and (ii)", (ii) replacing the term "the Eurocurrency" with the term "Term SOFR" in the instance in which it appears, (iii) replacing the term "London" with the term "relevant" in the instance in which it appears and (iv) deleting the term "other" before the phrase "central banking or financial regulatory authority".

n) Effective as of the Second Amendment Rate Effective Date, Section 2.16 of the Term Loan Agreement (Break Funding Payments) is hereby amended by (i) replacing the terms "Eurocurrency" and "Eurocurrency Rate" with the term "Term SOFR" in each instance in which such terms appear and (ii) replacing the phrase "at the interest rate which such Lender would bid were it to bid, at the commencement of such period, for deposits in the relevant currency of a comparable amount and period from other banks in the eurocurrency market" with the phrase "if Term SOFR were set on the date such Loan were prepaid or converted or the date on which the Borrower failed to borrow, convert or continue such Loan".

o) Section 3.19 of the Term Loan Agreement is hereby amended by replacing the term "EEA" with the term "Affected" in each instance in which it appears (including in the section heading).

p) The Term Loan Agreement is hereby amended by adding the following text in its entirety as a new Section 8.14:

SECTION 8.14 Recovery of Erroneous Payments. Without limitation of any other provision in this Agreement, if at any time the Administrative Agent makes a payment hereunder in error to any Lender, whether or not in respect of an Obligation due and owing by any Borrower at such time, where such payment is a Rescindable Amount, then in any such event, each Lender receiving a Rescindable Amount severally agrees to repay to the Administrative Agent forthwith on demand the Rescindable Amount received by such Lender in Same Day Funds in the currency so received, with interest thereon, for each day from and including the date such Rescindable Amount is received by it to but excluding the date of payment to the Administrative Agent, at the greater of the Federal Funds Effective Rate and a rate determined by the Administrative Agent in accordance with banking industry rules on interbank compensation. Each Lender irrevocably waives any and all defenses, including any "discharge for value" (under which a creditor might otherwise claim a right to retain funds mistakenly paid by a third party in respect of a debt owed by another) or similar defense to its obligation to return any Rescindable Amount. The Administrative Agent shall inform each Lender promptly upon determining that any payment made to such Lender comprised, in whole or in part, a Rescindable Amount.

q) Section 9.18 of the Term Loan Agreement is hereby amended by (i) replacing the term "EEA Financial Institution" or "EEA Financial Institutions" with the term "Affected Financial Institution" or "Affected Financial Institutions", as applicable, in each instance in which it appears (including in the section heading), (ii) replacing the phrase "write-down and conversion powers of an EEA" and the phrase "write-down and conversion powers of any EEA" with the phrase "Write-Down and Conversion Powers of the applicable" in each instance in which it appears and (iii) replacing the phrase "an EEA Resolution Authority" in subsection (a) with the phrase "the applicable Resolution Authority".

r) Effective as of the Second Amendment Rate Effective Date, Exhibit B-2 to the Term Loan Agreement (Interest Election Request) and Exhibit J to the Term Loan Agreement (Notice of Loan Prepayment) are hereby amended by replacing the term "Eurocurrency" with the term "Term SOFR" in each instance in which it appears and by deleting the column entitled "*Eurocurrency Borrowings* Indicate: Interest Period (*e.g.* 1, 2, 3 or 6 month interest period)".

SECTION 2. Representations and Warranties. The Borrower hereby represents and warrants that (a) the execution, delivery and performance by the Borrower of this Amendment and the consummation of the transactions contemplated hereby (i) are within such Person's organizational powers and have been duly authorized by all necessary organizational action, (ii) will not violate any organizational document of such Person or any of its Subsidiaries, or, in any material respect, any law, treaty, rule or regulation, or determination of a Governmental Authority, in each case applicable to or binding upon such Person or any of its Subsidiaries or any of such Person's property or to which such Person or any of its Subsidiaries or any of such Person's property is subject, or any judgment, order or ruling of any Governmental Authority, and (iii) will not violate or result in a default under any material contract of the Borrower or any of its Subsidiaries or any of its assets or give rise to a right thereunder to require any payment to be made by the Borrower or any of its Subsidiaries, and (b) this Amendment has been duly executed and delivered by the Borrower and constitutes the valid and binding obligation of the Borrower, enforceable against it in accordance with its terms, except as may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or similar laws affecting the enforcement of creditors' rights generally and by general principles of equity.

SECTION 3. Reference to and Effect on the Loan Documents. The parties hereto hereby agree that this Amendment shall constitute a "Loan Document" for all purposes of the Term Loan Agreement.

SECTION 4. Conditions Precedent. This Amendment shall become effective as of the date first set forth above upon the receipt by the Administrative Agent of counterparts to this Amendment duly executed by the Administrative Agent, each Lender and the Borrower.

SECTION 5. Delivery by Electronic Transmission. Delivery of an executed counterpart of a signature page to this Amendment in electronic format (including .pdf format) by electronic transmission shall be effective as delivery of an original executed counterpart of this Amendment.

SECTION 6. GOVERNING LAW. THIS AMENDMENT AND ANY CLAIMS, CONTROVERSY, DISPUTE OR CAUSE OF ACTION (WHETHER IN CONTRACT OR TORT OR OTHERWISE) BASED UPON, ARISING OUT OF OR RELATING TO THIS AMENDMENT AND THE TRANSACTIONS CONTEMPLATED HEREBY SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK.

SECTION 7. Expenses. The Borrower shall pay on demand all reasonable, documented out-of-pocket expenses in any way relating to the enforcement or protection of the Administrative Agent's rights under this Amendment, including any incurred during any "workout" or restructuring in respect of the Obligations and any incurred in the preservation, protection or enforcement of any rights of any Credit Party in any proceeding under any Debtor Relief Laws. The obligations of the Borrower under this provision shall survive the payment in full of the Obligations and termination of the Loan Documents.

SECTION 8. No Waiver. Nothing contained herein shall constitute a waiver of, impair or otherwise affect any of the Obligations, Guaranteed Obligations or any other obligation of any party hereto.

SECTION 9. Survival of Representations and Warranties. All representations and warranties made in this Amendment or any other Loan Document shall survive the execution and delivery of this Amendment, and no investigation by the Administrative Agent or the Lenders shall affect the representations and warranties or the right of the Administrative Agent and the Lenders to rely upon them.

[Remainder of page intentionally left blank; signature pages follow]

IN WITNESS WHEREOF, the parties have each caused this Amendment to be duly executed and delivered by its officer thereunto duly authorized as of the date first above written.

BRUKER CORPORATION,
as the Company and a Borrower

By: /s/ Gerald Herman
Name: Gerald Herman
Title: Executive Vice President and Chief Financial Officer

Subsidiary Guarantors:

BRUKER SCIENTIFIC LLC

By: /s/ Jason Faessler
Name: Jason Faessler
Title: Manager

By: /s/ Roald Webster
Name: Roald Webster
Title: Manager

BRUKER BIOSPIN CORPORATION

By: /s/ Gerald Herman
Name: Gerald Herman
Title: Assistant Treasurer

BRUKER AXS HOLDINGS, INC.

By: /s/ Gerald Herman
Name: Gerald Herman
Title: Manager

BRUKER NANO, INC.

By: /s/ Gerald Herman
Name: Gerald Herman
Title: Treasurer

BANK OF AMERICA, N.A. as Administrative Agent

By: /s/ Felicia Brinson
Name: Felicia Brinson
Title: Assistant Vice President

BANK OF AMERICA, N.A., individually as a Lender

By: /s/ Irina Froment
Name: Irina Froment
Title: Senior Vice President

TD BANK, N.A., individually as a Lender

By: /s/ Steve Levi
Name: Steve Levi
Title: Senior Vice President

M&T BANK, successor by merger to People's United Bank, N.A., individually as a Lender

By: /s/ Darci Buchanan
Name: Darci Buchanan
Title: Senior Vice President

WELLS FARGO BANK, NATIONAL ASSOCIATION, individually as a Lender

By: /s/ Yinghua Zhang
Name: Yinghua Zhang
Title: Senior Vice President

EXHIBIT 31.1

CERTIFICATION

I, Frank H. Laukien, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Bruker Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
   a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
   a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
   b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 4, 2022

By: /s/ FRANK H. LAUKIEN, PH.D.
Frank H. Laukien, Ph.D.
President, Chief Executive Officer and Chairman
(Principal Executive Officer)

EXHIBIT 31.2

CERTIFICATION

I, Gerald N. Herman, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Bruker Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
    a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
    a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
    b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 4, 2022

By: /s/ GERALD N. HERMAN

Gerald N. Herman
Executive Vice President and Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)

EXHIBIT 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Bruker Corporation (Company) on Form 10-Q for the three and nine months ended September 30, 2022, as filed with the Securities and Exchange Commission on the date hereof (Report), each of the undersigned, Frank H. Laukien, President, Chief Executive Officer and Chairman of the Board of Directors of the Company, and Gerald N. Herman, Chief Financial Officer and Executive Vice President of the Company, certifies, pursuant to 18 U.S.C. section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of his knowledge:

(1) The Report fully complies with the requirements of section 13(a) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: November 4, 2022

By: /s/ FRANK H. LAUKIEN, PH.D.
Frank H. Laukien, Ph.D.
President, Chief Executive Officer and Chairman
(Principal Executive Officer)

Date: November 4, 2022

By: /s/ GERALD N. HERMAN
Gerald N. Herman
Executive Vice President and Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)